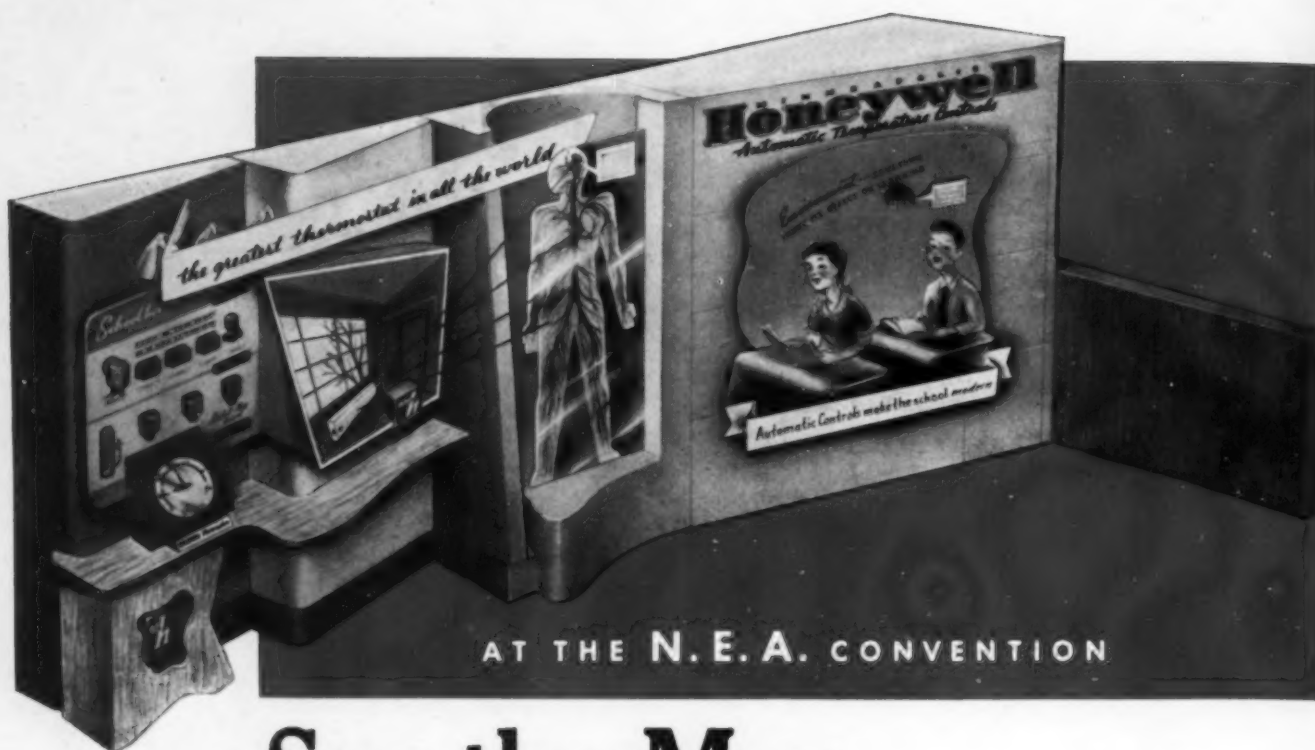




# College AND UNIVERSITY Business

**FEBRUARY 1950: Trustees Are People • Insurance as Safeguard for Finances • When Calamity Strikes • Audio-Visual Center • Control Air Conditioning • Small Cafeteria • Furnishing, Remodeling, New Building**



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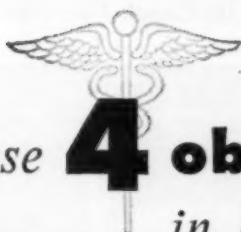
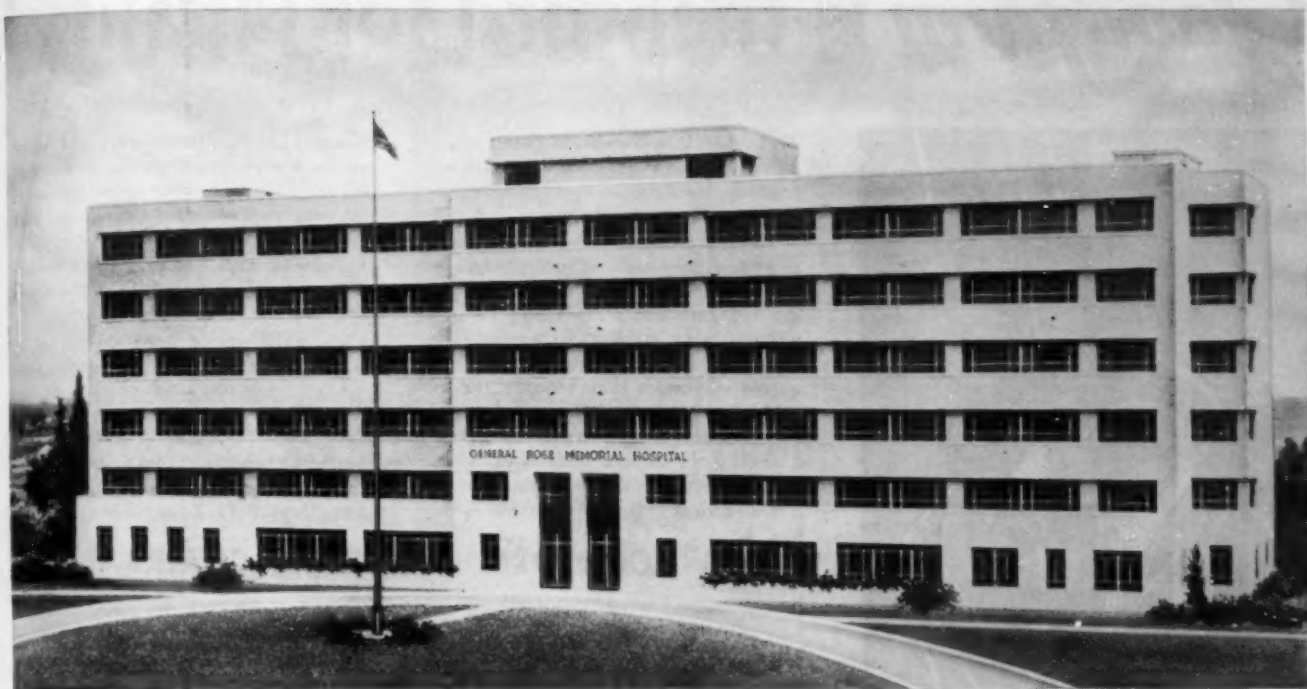
Learn the Importance of Temperature Control  
See the Honeywell Exhibit at the  
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February 25 – March 2



SPACE  
A-9  
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*Guarding America's Health with Controlled Atmosphere*

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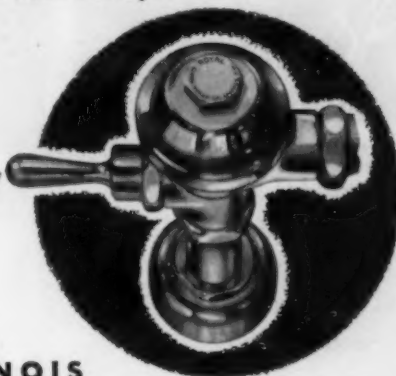
Throughout this modern hospital the equipment for all services has had to meet exacting standards of performance and reliability. Thus SLOAN considers the selection of its flush valves for patient, employee and public rooms a tribute

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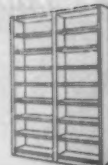
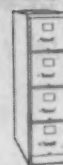
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Vol. 8, No. 2, February 1950

**February 1950**

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## Among the Authors



E. H. Betts

EDGAR H. BETTS, former chairman of the board of trustees of Russell Sage College, Troy, N.Y., now serves as chairman of the investment committee of that institution. He suggests on page 11 the way in which an investment committee of trustees should be handled in order to obtain the maximum in cooperation and effectiveness. Institutional finance has been a major concern of his for many years; he also was chairman of the board of trustees of the Emma Willard School in Troy. In business life he has been president of Cluett, Peabody and Company and a vice president of a manufacturing concern and a publishing house. Some years ago, though a graduate of Yale, he was elected a life trustee of Brown University, a position he held for five years before resigning because of the pressure of other affairs.



W. S. McCready

W. STEWART MCCREADY, business manager of Geneva College, Beaver Falls, Pa., tells on page 17 how insurance could be effectively utilized as a safeguard for institutional finances in making certain that a college will not suffer catastrophic losses. He was an insurance agent before his entry into the business administrative side of higher education. . . . T. SMITH MCCORKLE, dean of the school of fine arts at Texas Christian University, Fort Worth, has spent most of his career in music education circles and was well prepared to serve as adviser in the planning of the fine arts building at T.C.U. which is described on page 23. Despite his musical background, he professes a vigorous interest in athletics, indicating that all of his activities are not of the "long hair" variety. He has considerable reputation as a violinist and conductor, in addition to his academic responsibilities.



E. M. Conrad

ERNEST M. CONRAD, assistant comptroller of the University of Washington at Seattle, describes on page 26 the planning and philosophy that went into designing a new administration building on campus. Prior to affiliation with the university staff, he had served as manager of the Student Cooperative Association and before that time had been in accounting and auditing work with a business concern. One of his major interests is the development of efficient office systems, methods and work simplification.



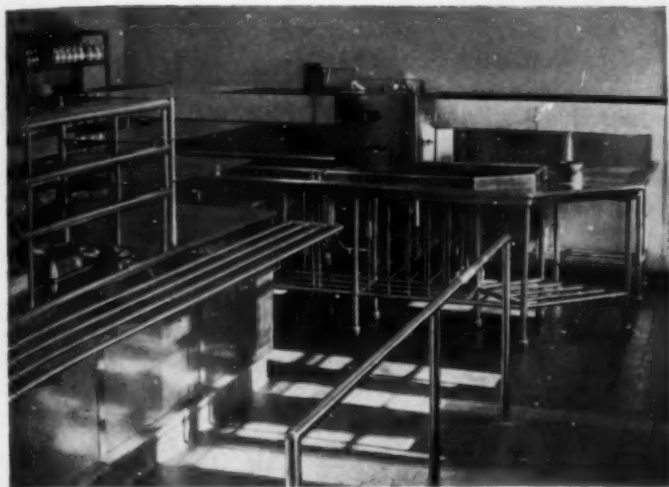
R. J. Watts

RALPH J. WATTS, business manager of Lawrence College, Appleton, Wis., points out on page 28 that it is not always necessary to build a new building when it is possible to renovate and modernize the old. He has been in his present position as business manager since 1926 and during 1943-44 served as acting president. Other responsibilities have included that of treasurer of the Institute of Paper Chemistry from 1929 to 1943 and national secretary-treasurer of Phi Sigma Kappa from 1923 to 1938. He will retire as business manager on July 1 to become vice president of the college.

# IDEAS

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**Famous Phillips-Exeter Academy features Blickman-Built equipment with novel heated serving shelves**



**STAINLESS STEEL DISH TABLES** (against wall)—small compact unit designed for efficient operation. Raised rolled rim prevents spilling of liquids on floor. Note all-welded stainless steel understructure and pear-shaped feet, which are adjustable. Cafeteria counter at left has cantilever brackets supporting plate glass shelves. This construction eliminates obstructions, leaves counter space free and minimizes dish breakage.

**STEAM-HEATED SHELVES** feature this stainless steel serving counter in Dunbar Hall. Loaded dishes placed on the shelves are kept hot and palatable while awaiting pick-up by waiters. Note the highly-polished, sanitary stainless steel surfaces. In the years to come, they will remain as bright and clean-looking as they do today.



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# Questions and Answers

## What Effect Devaluation?

**Question:** Will the devaluation of the British pound have any effect on the items that are customarily purchased by colleges and universities?—J.B., Mo.

**ANSWER:** Apparently there is to be no great flood of price reductions traceable to the devaluation of foreign currencies. Unless one is interested in certain specific commodities, such as smoking pipes, British cars, French wines, or Belgian lace, there is likely to be disappointment. We think of rugs being made principally from jute and wool. That would seem to indicate India and Australia, but on inquiry we find that jute comes from Pakistan, which has not devalued the currency, and that rug and carpet wools do not come from Australia but from several other areas, including Asia Minor and South America, where there has been no devaluation.

Many foreign-made products are being increased in price at home enough to keep the price in dollars practically the same. Canada's 10 per cent reduction will affect only the items that she actually desires to export at a reduced price. It has already been announced that there will be no reduction in pulp. We have noticed some effect on domestic prices for competitive products. Certain cotton textiles were increased just before the devaluation and within a couple of weeks this increase was canceled and prices were back at the previous level. You might possibly pick up some bargains in New York on Irish linens, English pottery, and Brussels carpets.—GEORGE S. FRANK, *manager of purchases, Cornell University.*

## Maid's Duties

**Question:** How many rooms in a residence hall should a maid be expected to handle?—R.T., Ill.

**ANSWER:** Circumstances vary so much in residence halls that it is difficult to give a specific answer to the exact standards of work for maids. General practice in men's halls is that maids make beds and do light cleaning six days a week; once a week, a thorough cleaning and change of linen.

They also have some responsibility in taking care of lounges and other public areas. On this basis it is reasonable to assume that one maid can take care of 20 to 30 rooms. The range is necessary because of the variables of rug or no rug, double deck or twin beds, double room or single room, type of floor, and amount of woodwork. The general practice is to have the janitor clean halls, stairways and bathrooms in men's dormitories.

Women's residence halls present a different problem because, for the most part, residents are responsible for making their own beds and maids do only a thorough cleaning once a week—in some cases not even changing the linen. On this basis the number of rooms a maid is responsible for would be about the same as for men, and another variable would be whether or not there are lavatories in the rooms. The time a maid takes in making beds in the men's halls would be offset in the women's residence halls by having the maid clean bathrooms and possibly corridors.

We found that a maid working alone can take care of about 50 per cent more beds when they are single than if they are double deck. This variation is not entirely offset when maids work in pairs. The number of rooms on a maid's station is naturally more important than the number of beds.—W. NORRIS WENTWORTH, *assistant director, halls of residence, Indiana University.*

**If you have a question on business or departmental administration that you would like to have answered, send your query to COLLEGE and UNIVERSITY BUSINESS, 919 North Michigan Avenue, Chicago 11, Ill. Questions will be forwarded to leaders in appropriate college and university fields for authoritative replies. Answers will be published in forthcoming issues. No answers will be handled through correspondence.**

## Purchasing Books

**Question:** Is it to the advantage of a college to purchase books through the campus bookstore in preference to the library?—D.M.H., R.I.

**ANSWER:** Yes, it is to the advantage of the college to purchase books through the campus bookstore in preference to the library provided the campus store is already doing a presentable job on trade books. Trade practices give the library a discount ranging from 20 to 25 per cent when ordered directly from the publishers. Some jobbers do better than this. However, the college store is normally entitled to a 40 per cent discount on trade books.

It is an ethical practice for the school to purchase its books through the college store, but these books should go through the hands of the store and should not be shipped in directly to the library under the subterfuge of an order number. The college store will have to be constantly vigilant to see that it receives the correct trade discount. It simplifies matters a great deal to have the campus store merchandise general books.—RUSSELL REYNOLDS, *executive secretary, National Association of College Stores.*

## Musical Instruments

**Question:** Would you advise us if musical instruments for use in colleges and universities are free from excise taxes?—M.S., Ill.

**ANSWER:** The following is an excerpt from Tax Regulation 46 under the heading "Manufacturers' Excise Taxes I.R.C. Sec. 3404, imposing a tax of 10 per cent on radios, phonographs and musical instruments:

"... but the tax imposed by this section shall not apply to musical instruments sold for the use of any religious or nonprofit educational institution for exclusively religious or educational purposes. The right to exemption under this subsection shall be evidenced in such manner as the commissioner, with the approval of the secretary, may prescribe by regulations."—T. E. BLACKWELL, *treasurer, Washington University.*

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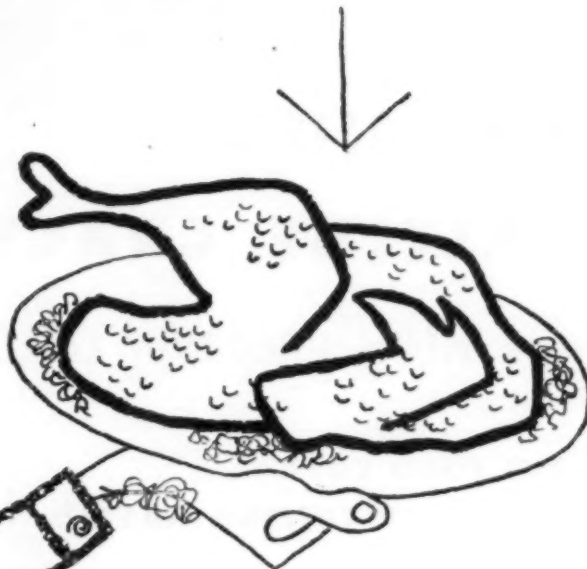
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H-1 } Packed	19 to 20#	1# 2 oz. to 1# 3 oz.
H-02 } 6 Birds	21 to 22#	1# 4 oz. to 1# 5 oz.
H-2 } (12 Halves)	23 to 25#	1# 6 oz. to 1# 7 oz.
H-03 } Per Box	26 to 27#	1# 8 oz. to 1# 9 oz.
H-3	28 to 30#	1# 10 oz. to 1# 12 oz.
<b>FRYERS</b>		
H-04	31 to 32#	1# 13 oz. to 1# 15 oz.
H-4 } Whole	33 to 35#	2# to 2# 2 oz.
H-05 } Birds	36 to 38#	2# 3 oz. to 2# 5 oz.
H-5 } (6 Birds)	39 to 42#	2# 6 oz. to 2# 9 oz.
H-06 } Per Box	43 to 47#	2# 10 oz. to 2# 15 oz.

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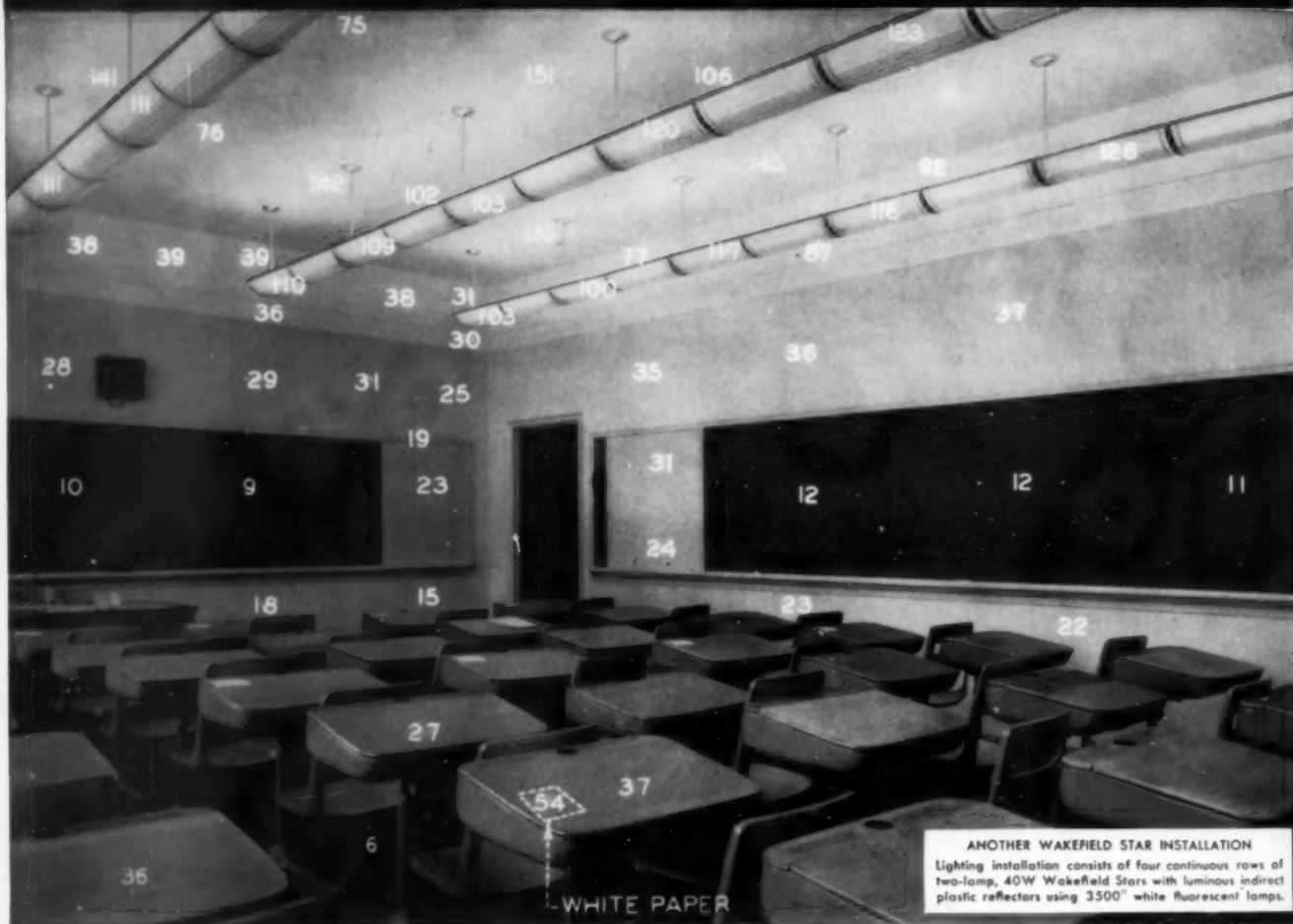
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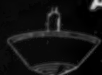
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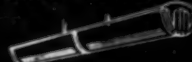
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## WHAT ARE WE BUSINESS OFFICERS WORTH?

### BOARDMAN BUMP

Treasurer, Mount Holyoke College  
South Hadley, Mass.



WE BUSINESS OFFICERS ARE EXPECTED TO HAVE a good scale of educational values, but how often do we use this scale to measure our own worth? Of paramount importance to educational administrators today are the problems of financing higher education and the issues raised by these problems. Let us consider the present-day relationship of education to the world around us and then gauge our individual performances against our potential worth.

The larger financial problems of higher education in great measure arise from economic, social or political conditions. As college business officers we record and observe the impact of national trends upon our institutions. For example, we have witnessed the doubling of prices, wages and the cost of living in a period of 15 years. In our financial statements we have recorded an increasing number of gifts to education, but these gifts have been in smaller amounts than in the past. We eye with concern the low interest rate on government bonds and, with hopeful caution, the high yields on common stocks. We respond to these inflationary trends by raising fees. How long and how far can we go in increasing the price of education to the public?

The privately supported institutions heatedly debate the wisdom of seeking or accepting financial aid from the federal government. All these financial trends are the result of major forces that are moving the nation's economy in a direction that is harmful to the large majority of our institutions. The deterioration in the value of the dollar resulting from large federal expenditures and consequent high taxes is the end product of underlying trends that threaten to vitiate our capital security and our ability to render a traditional high service to society.

You may say that all of this is self-evident and that we business officers are doing the best possible job to offset inflationary conditions by practicing economy and efficient business methods. Your question will be—what more can we do or should we do?

First of all, are those things that are self-evident to us as well understood by others who should be

informed of the financial plight of higher education? Is there not evidence at hand to indicate that we are presented with an opportunity to take further advantage of our knowledge of educational finance and of our positions of financial trust?

Moreover, does it not follow that each one of us could speak more frequently and forcefully about the financial issues of the day as they apply to higher education in conversations, speeches and articles? Shouldn't we emphatically stress the dependence of institutions on the profit system that has accounted in large measure for the gifts and endowments that benefit the student as well as the society of which he becomes an important part? And is it not now time to alert the public to the consequences of the government's playing an increasing rôle in the regulation and operation of our economy and to join with others in challenging the merits of an ever-increasing load of federal taxation?

If we are to measure up successfully to the important task of informing the public of our financial problems, our full powers for analysis, interpretation and selling must be invoked.

Institutions of higher learning are in crying need of being understood. But, they must first be analyzed not only as financial but as educational entities. The business officer's responsibility is to do just this.

The facts which analysis reveals always need interpretation. We often lack the zeal or courage to transmit or sell to others the product of our work (analysis) and its significance (interpretation). Of what avail is it for us to identify the imperative issues of higher education today unless we communicate our findings to others?

In short, are not we financial leaders in education under obligation to speak up and be heard as never before on the specific and larger issues that affect the fundamental welfare and security of our colleges and universities in the years ahead? If our answer is in the affirmative, there is every reason to believe that we may discover that our full worth as business officers has not as yet been proved.

# Looking Forward

## Crazy Business

WHAT'S HAPPENING TO THE INDEPENDENCE OF THE American college and university? In the face of overwhelming enrollment and insufficient income, will higher education be able to weather the storm without forfeiting its freedom? "Freedom" and "independence" are overworked words in the oratory of the day. Though overworked, these words are valid and pertinent to the current crisis in higher education.

Many persons in higher education are looking for relief from current financial pressures by advocating a program of support from governmental sources. In their naïvete, they plead the case of a "college education for all" on the theory that a federal handout will bring the millennium where all may be served who come but where colleges can continue as citadels of free inquiry and independent action—a contradiction in fact.

In the first place, why a federally sponsored scholarship program of \$300,000,000 that will entitle a student to receive between \$600 and \$1000 a year? Does his education have to be handed him on a silver platter? Is there no virtue in a student working to finance his own education in part? Or is that old fashioned and not properly representative of a "broad social perspective"? If so, some of us were born 30 or 40 years too soon.

Check the finances of the average college. Student loan funds have been accumulating faster during the last decade than have the demands put upon them. It's not likely they will disappear overnight.

Everywhere one goes in higher education one hears "gripes" about federal interference where federal monies are involved. Institutions specializing in research complain of the demands put on their faculty by governmental agencies for specific work records, special accounting procedures, and determination of project emphasis. Witness the recent negotiations by a committee of university administrators with the Atomic Energy Commission.

A large number of colleges and universities are continually "negotiating" with the Veterans Administration in order to get their records and the V.A.'s to jibe properly. What a brilliant record of inconsistency and false starts and stops! College business officers state they are "sick and tired of hearing about V.A. problems at every annual convention" but recognize no other alternative, as they have in essence become the tail on the V.A. kite and are whipped around by the winds of bureaucratic caprice.

Proponents of federal aid point with pride to the land-grant institutions and their receipt of federal monies as a result of the Morrill Act. They challenge critics to show "dictation" or "pressure" from federal sources. Whether this program is good or bad is not challenged here, but isn't it rather odd that there is no college of agriculture in the United States that is entirely privately supported? Federal money has effectively dominated this field. And yet agriculture is the nation's No. 1 private business—at least it used to be private and independent.

Colleges and universities, if genuinely interested in maintaining their independence, would be well advised to plead their case with private citizens and private business. After all, these are the same persons from whom the government gets its funds. Who's kidding whom when it is asserted that only government can meet the financial challenge?

If the foregoing comments sound like those of an alarmist, they are so intended. Higher education doesn't have much more time to make a decision as to which way it wishes to go.

## Social Security

AT LONG LAST, IT APPEARS LIKELY THAT CONGRESS will authorize the inclusion of colleges as participants in the social security program of the federal government.

When social security legislation was approved in 1936, colleges and universities strongly opposed being included in the program. Some college presidents felt that it waived the traditional tax-immunity enjoyed by the institutions they represented. Since that first protest, college administrators have altered considerably their views on the subject.

Within the period of time that has elapsed since the passage of the Social Security Act, many college administrators have found it desirable or necessary to establish retirement or pension programs. It is regrettable that most of this activity has been weighted heavily in favor of the faculty, with nonacademic personnel often considered as an afterthought. Some administrators seem to feel that the availability of social security will relieve their institutions of the responsibility of developing a retirement or pension program of their own. A college cannot expect the social security tax to solve all the problems of its retirement-age personnel. It can supplement a local pension program; it should not be expected to replace it.



IN ONE OF THE CLASSIC BOOKS DEALING with institutional investment policies\* it is related that the original endowment of Johns Hopkins University was given by Mr. Hopkins in the form of Baltimore and Ohio railroad stock. At the time, this stock was so valuable and seemingly so secure, Mr. Hopkins recommended to his trustees that they hold the stock indefinitely. It was only a few years before financial disaster overtook the B. & O., with the result the university was seriously crippled for years.

One would assume that trustees and donors alike had long since learned the virtues of diversification in endowment investments. Yet it is not so long since a comparable episode came to my attention. Finding itself with a surplus of cash for which the regular channels did not provide a use, the board of a financial institution decided to buy some bonds. The members looked around the market and finally bought \$400,000 West Shore railroad bonds. This was the only issue of bonds they owned; they liked them so well they had them registered and bound in books so that they wouldn't have to

\*Arnett, Trevor, College and University Finance, 1922.

## TRUSTEES ARE PEOPLE

**EDGAR H. BETTS**

Vice Chairman, Board of Trustees  
Russell Sage College  
Troy, N.Y.

bother cutting coupons. As the bonds would not be due for more than 400 years, they thought this would save the cutting of a lot of coupons.

This, of course, is an exaggerated instance. There are institutions that have done and are doing outstanding jobs of investment management. Much has been learned from the experience of the past. But it is also unfortunately

true that many institutions are still not making the best use of their endowment funds.

Institutional trustees, who perform time consuming services of great value without compensation other than the honor attached to the office and the satisfaction of doing a good service, have a heavy responsibility. Now when virtually every endowed institution in

the country is appealing to private philanthropy for more funds with which to meet the pinch of higher costs, it appears timely to consider how this responsibility is discharged and whether it may not be possible to bring the handling of more endowment funds up to the high level of achievement demonstrated by a few.

I have observed trustees in action for more than 30 years, both as a trustee and as an outside adviser. I admire the persons with whom I have served and appreciate their willingness to give freely so much of themselves and their time. Out of this long experience has come the conclusion that two principal factors underlie the failure of many institutions to obtain over the years the maximum value from their endowment funds: (1) the absence of a realistic, *organized* approach to endowment investing, and (2) the lack of effective leadership that can reconcile and direct into constructive channels the varying points of view, backgrounds and abilities represented on the typical board of trustees.

#### PERSONALITIES ON THE BOARD

A board of trustees resembles a melting pot; decisions made will depend largely on how well the elements are mixed. Here are some characteristic personalities, several of which are likely to be found on any board:

*Mr. Black*, sitting on the edge of his chair at the start of the meeting, is eager to speak. He is just back from a business trip, an important meeting, or a long-distance 'phone call. Somewhere, he has picked up some "inside information" and, until he gets it out of his system, he won't be happy. Once he has had his say, the meeting can proceed with its business.

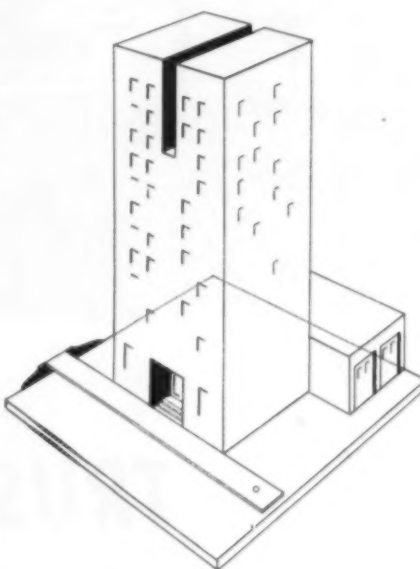
*Mr. Gray* is the quiet type. His thinking is clear, he seems instinctively to know values, and when he speaks everyone pays attention. But he is always reluctant to talk and is not half of the help he could be.

*Mr. Blue* doesn't know what will ever happen to the capitalist system anyway, but he is a shrewd man who has taken good care of his own money and believes that the wisest policy for endowment investing is to spread the risk between bonds and stocks, all of the highest grade. But he frequently disregards both price and income.

*Mr. Green* is much more courageous. He is young, keen and eager. He has a good voice and enjoys using it. He has been successful in other

affairs and he feels sure that he knows all the answers. He will take an extreme position and argue his point well, but after *Mr. Gray* answers him *Mr. Green* will settle for only a small fraction of his original position.

*Mr. Indigo* has only one objective: that is to turn the fund over to his successors in just the form the present committee received it. He thinks there is less responsibility involved in holding a security than in buying it. Indigo can be counted on to resist change, and his presence at a meeting will always prevent hasty and impulsive action. Sometimes it prevents any action at all. Indigo is an older man, greatly respected. He may annoy his



associates, but they wouldn't drop him off the committee for anything.

*Mr. Rose* is a broker. He knows the capitalization, earnings and prospects of all the companies represented in the list and the rating of all the bonds. He knows the latest news that has come over the tape. Rose really likes action and doesn't mind a bit of speculation, even in an endowment fund.

*Mr. Lemmon* used to be a bank examiner. There isn't a chance of buying a bond above call price while he is around.

*Mr. Pink* is income minded. "What's an endowment for if not for income?" He favors medium to lower grade bonds and preferred stocks even when they are selling at historically high prices. He forgets that the endowment only can produce regular income consistently over a long period of years if its principal is kept safe and growing.

*Mr. Drab* likes railroads and railroad securities. "Trucks and planes can

come and go but rails endure. Mortgage bonds of railroads are secured by property of great value. The country can't endure without them."

*Mr. Cherry*, however, can't abide them. He just flew to San Francisco and was thrilled by the experience.

*Mr. Purple* thinks preferred stocks have all the virtues of both bonds and common stocks. *Mr. Violet* thinks they have all the faults and none of the virtues.

So *Mr. White*, chairman of the committee, has his hands full. He is captain of an all-star team, but his authority is limited. It is up to him, however, to see that essential matters are covered, that the discussion doesn't get sidetracked or bogged down over petty details. He must realize that such a variety of talents *can* be a strong factor in working out a successful investment program, but that the difficulty of reconciling so many points of view is likely to militate strongly against any action at all being taken. The ingredients are valuable—priceless, in fact—but they do not add up to a good result unless something is done with care and skill to sort out the ideas and see that those proper to the fund are the ones adopted.

This is precisely where so many finance committees in practice fall down. No one is willing to take the responsibility of leadership. Without effective leadership, there is likely to be endless discussion—leading nowhere. Securities that should be sold remain in the portfolio, while others that would prove more profitable are never bought. Or, when a decision is finally reached, it is too late.

#### INVESTMENT COUNSELOR NEEDED

Trustees are people, and it is not hard to understand why few will take the kind of responsibility that is so important an ingredient of successful operation. They are, after all, volunteers, rendering their services without compensation. While they feel a deep responsibility for the institution they serve, it is a different kind of responsibility from that which they feel toward their own company.

Some institutions have found an answer through employing a competent investment man, either as outside adviser or as a full-time officer, charged with continuing responsibility for the investment account, subject, of course, to over-all supervision by the board of trustees. In either case, there is one individual whose continuing connec-

tion with the institution presumably depends upon his doing an effective job and who therefore has a strong incentive to see that decisions are made and acted upon. Many endowment funds are too small, of course, to justify the employment of a full-time investment expert, but it is hard to understand why more have not obtained the services of independent outside counsel. The latter *may* be no more able than one or more members of the board, though the very nature of his business makes this improbable; the important point is that he can be counted on to get things done.

#### BETTER ACCOUNTING PRACTICE

With or without such *extra-board* assistance, there is a step that many institutions can and should take that would go far toward improving the long-term return of their funds. That is to bring some organization into their accounts, reports and investment programs. Investment counselors frequently discover, when a new endowment account is analyzed for advisory service, that the trustees know little about the funds they administer, who gave them, when they were added to the fund, what value they had at the time. Frequently, the only trustworthy information is a list of the contents of the safe deposit box. The trustees have no certain knowledge of the amount of the endowment for which they are responsible.

An admittedly extreme example recently came to my attention. When the investment counsel for this institution attempted to determine the fund liability, he discovered that a former treasurer, a thrifty old lady, had systematically held back as much investment income as she could conceal from her board of directors. Her intentions were of the best—she had carefully added all the savings to the endowment principal. But from the way she kept her books, it was almost impossible to find out how much this economical practice had amounted to during the long period of her treasurer-ship.

Of course, such a situation is understandable. Fifty years ago the books of all but a few institutions consisted only of a record of receipts and disbursements. The widespread introduction of good accounting procedures has been fairly recent among the smaller endowed institutions. There are many funds whose endowment liability can at best be only approximated.

The investment results of even the more important universities are difficult to trace over a period of years. Not only are library files incomplete but few institutions publish adequate reports and fewer still have maintained the same form of report over a period of years. As a result, too little information is publicly available concerning the stewardship of endowment funds. Trustees have little or no idea whether they have done a job to be proud of or one that should impel them to a close examination of their past methods and possible means of improvement.

As a starting point, those institutions that have not done so should have their books audited and their form of accounts set up according to the pattern now standardized by certified public accountants specializing in the fields of education and philanthropy. They should remember that while there may be investments in all funds—current, plant and endowment—funds once committed to endowment are there to stay.

From there on, it is basic that those responsible for a fund should establish a long-range objective and define the principles that will govern their action, the authority they wish to give to their committee, and the standard of measurement by which they will judge the results.

#### CONSISTENT PLAN REQUIRED

If the board is realistic, it will acknowledge its inability to predict the future with anything like the confidence or assurance it would like to have. And it will take all possible precautions by diversifying its risks and preparing for the unexpected. This may mean the adoption of a formula plan, as a number of educational institutions have recently done, or simply a broad statement of policy under vari-

ous possible eventualities. But some *consistent* investment planning, advisable in all circumstances, is particularly important where changing committees are charged with responsibility.

At each meeting, the well organized committee will start with the facts. Each member will have in front of him a copy of the list of investments and amount of cash awaiting investment. It will be broken down by categories of securities and will show diversification of stocks by industry. For each security will be shown book value, market value, and the current rate of income. It will be possible to tell at a glance whether holdings are in line with the predetermined program, or whether it is necessary, then and there, to buy or sell securities in any particular category in order to make the fund fit the requirements previously set for it.

#### SORT OUT GOOD IDEAS

This constitutes probably the most effective single means of overcoming the inertia, or refusal to make decisions involving responsibility, that besets so many investment committees. In addition, orderly habits at regularly held meetings are an important factor in getting the good ideas of committee members sorted out and the ephemeral expressions overlooked, without offending anybody.

The war and postwar years have been exceedingly difficult ones for privately endowed institutions, and it is to be hoped that their appeals for additional funds will fall on many sympathetic ears. At the same time, the point well can be made that good care of what they already have, together with clear, complete and frank reports on what they have done with it, may constitute a sounder basis of appeal to potential donors than one which is based purely on sentiment.

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### *Write for Volume Index*

If you bind your volumes of COLLEGE AND UNIVERSITY BUSINESS you will want the index to Volume 7, covering issues from July through December 1949. You may obtain your free copy by writing to COLLEGE AND UNIVERSITY BUSINESS, 919 North Michigan Avenue, Chicago 11, Illinois.

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## What **FURNISHINGS** should be provided in a college room?

**RUTH E. DAVIS**

Director of Housing  
Cornell University

IN FURNISHING A RESIDENCE HALL, an important factor to keep in mind is that you are providing a place for students to live nine months of the year.

When our newest dormitory was opened in the fall of 1946 as a residence hall for women, the student rooms were furnished with the idea of making them comfortable and convenient for a girl's "home away from home."

Each girl was provided with a bed, coil spring, innerspring mattress; bookcase; chest and mirror; desk and desk chair; easy chair; bench to be used as seat or end table; night stand, and a braided rag rug.

Since there are no center lights in this residence hall, we have provided a floor lamp and a table lamp to be used on the desk. Both have indirect lighting. We provide three blankets, bed linen, and a bedspread. When the student arrives, the room is ready to live in, with the addition of her own personal effects.

The night stand and the bench might be considered luxury items rather than essentials, but they add a great deal to the convenience and liveability of the room.

Although I think the ideal residence hall is one in which the college or university does the furnishing, many colleges disagree with this idea. Some students rent a practically empty room, providing all the necessary furnishings themselves. This arrangement offers ample opportunity for the room to be furnished with all the discards from home, or, if there are no financial restrictions, the room can be lavishly furnished and decorated.

Some colleges offer rooms equipped with a bed (no mattress), a chest of drawers, desk and straight chair. The student supplies her own mattress, which is bad from a housekeeper's point of view since the mattress is seldom a new one but a used one no longer needed at home. That isn't the end of the matter; rather than ship the mattress home again, it is sold or given to another student and so passes down the line until even the most unobserving student decides it is ready for the trash can.

Blankets and quilts furnished by the student also can present a difficult housekeeping problem. What a motley array they can be—usually discards from the supply at home. Mother doesn't want to send good blankets!

Cornell girls are now getting completely furnished rooms; they can express their own individuality with curtains and other personal things.

Bed linen should be provided and laundered by the college if you want uniform good standards in the rooms. Students left with the responsibility of changing their beds and having their own bed linen laundered are likely to slip into careless ways. It is so easy not to bother to change the bed.

An interesting solution to the furnishing problems of one college I know was provided by a merchant in the vicinity who each year set up a salesroom in a tent on the college campus where he sold or rented furniture to the incoming students. All this seems to put a decided premium on money, and it is a most undemocratic way to furnish the college residence halls.

If every room is furnished alike by the college, then each student, whether rich or poor, enjoys the same privilege of living in a comfortable and convenient place. Such a room presents a far more pleasing impression on the prospective student and her parents when they first arrive. The ohs and ahs of both student and parents when they go into such a room are proof enough of the desirability of such furnishings. Plenty of leeway is given for the student to express her own individuality when she supplies curtains, pictures and all the other personal belongings a girl brings to college.

The problem of maintenance is greatly simplified when the room furnishings belong to the college or university. Repairs and replacements can be controlled and, in case of damage, responsibility can be placed where it belongs. If the student is responsible for any damage through carelessness or maliciousness, then she should be held financially responsible for any costs involved. If furnishings are properly taken care of, the life of the average furniture can be greatly extended and your residence hall always will look well.

Keep in mind that in furnishing a girl's room you are providing a home for her for the greater part of a year.

WHEN DISASTER STRIKES INTO THE calm of a university, the first concern is loss of life and immediate care for the victims. But a planned organization of trouble shooters can do much to check confusion, nip wild rumors, and bring order out of chaos.

University of Oklahoma officials had to deploy their administrative offices and departments along tragedy tested lines twice in 1949. A freakish tornado whipped across the north campus April 30 and injured 48 persons. Three student lives were lost in a residence hall fire starting about 2:55 a.m. December 4 on the south campus.

What can a school do when calamity hits?

First reports of the O.U. fire set in motion machinery that functioned con-

## What can a school do when **CALAMITY** strikes?

**FRED GROVE**

Senior Assistant in Public Relations  
University of Oklahoma

**A planned organization of trouble shooters went into quick action following University of Oklahoma fire**



Three University of Oklahoma men students lost their lives in a residence hall fire on December 4. More than 300 were housed in the structure, which was constructed in 1941 by the navy as quarters for bachelor officers. Here workmen are shown at the scene.

tinuously, with the president's office in the administration building serving as the nerve center of operations.

Burned and injured students were rushed to the school infirmary and the municipal hospital in Norman.

Under a prearranged plan, the night PBX operator on the main campus alerted administrative officials and heads of key departments, just as she does in any emergency. Departments notified included police, divisions of the physical plant, and housing. Employees in the admissions and records office soon tallied a list of the injured from their files. A direct telephone line was established between the president's office and the fire scene.

Special guards were stationed around the area. Central press and radio headquarters were set up. Press passes were issued for correspondents and photographers to enter the restricted area. Operators of the PBX board in the president's office were given complete and up-to-the-minute information so they could give all available facts to the countless persons who called locally or by long distance.

Public relations staff members obtained statements and other information from university officials for newspapers and radio stations. Assistance also was given radio newsmen for on-the-spot broadcasts. Regular checks were made with the university infirmary and the Norman hospital for reports on the condition of the injured. Any changes were made available immediately to the press.

Using a roster of men students housed in the residence hall, counselors and office of admissions workers started accounting for persons reported safe. Meanwhile, more than 300 students were moved to residential houses and other residence halls, where meals were provided. Needed space was made possible by shifting girls to the new women's quadrangle.

Within a few hours after the fire,

counselors mimeographed and distributed an instruction list. The sheet explained where to get meal tickets, clothing, financial assistance, books and supplies, and housing. By this time a clothing collection center was operating in the R.O.T.C. armory. Also, each student was urged to notify his parents of his safety.

Counselors and members of the president's staff made long-distance calls to families of the injured. Parents were assured that the best available medical care was being provided. A few days later, two students reported "critical" were out of danger.

In addition to the telephone messages, Pres. George L. Cross followed up with individually typed letters to parents within twenty-four hours after the fire started. Events surrounding the fire and provisions to care for all students were described in detail. Parents of the three victims were notified before the names were released to the press.

President Cross attended services for the two Oklahoma youths who lost their lives. O. D. Roberts, counselor of men, accompanied the body of the third victim to the family home in Connecticut, where rites were held. Memorial services for the three were observed on the university campus.

Alpha Phi Omega, national service fraternity for former boy scouts, set up an information booth in the entrance of the administration building to screen persons seeking information or assistance. University social fraternities opened their doors and gave food and clothing.

The Veterans Administration gave G.I.'s books and supplies, while non-veterans received replacements through cash contributions for the burned-out students. Red Cross workers moved in rapidly and provided emergency cash gifts and clothing.

By late afternoon following the morning of the blaze, the roster had

been narrowed to three missing students. Positive identification soon followed. Newspapers and radio stations, giving full cooperation, speeded the difficult task of identification. Those students who were out of town when the fire started were urged to call the university. In this way names were checked off with other students already accounted for on the campus. WNAD, O.U. radio station, was of great help, breaking into programs whenever bulletin information was received.

Loss of life in the fire focused the attention of the Oklahoma legislature on all state schools where, like other institutions over the nation, greatly expanded student groups are housed in buildings of the emergency type, many of them of wood construction. A legislative committee appointed to study the O.U. tragedy absolved university authorities of any negligence. All recommendations of the state fire marshal's office had been met, lawmakers found.

The burned building, constructed in 1941 at a cost of \$412,000 by the navy as a five-wing bachelor officers' quarters, was equipped with 40 fire extinguishers and 16 nozzle-and-hose type of extinguishers. Faulty wiring was ruled out as a possible cause, as lights were burning in the building after the fire started. Furthermore, records in the university fire chief's office showed the building had been inspected November 8. A night watchman checked the building shortly before the blaze started.

In addition to the building loss, students lost most of their personal belongings. Approximately \$28,000 had been contributed to a student fire relief fund by early January to replace clothing and other personal items. Donations were received from virtually all groups. Several colleges and universities outside Oklahoma contributed. Besides cash, many individuals gave suits and other needed articles of clothing.

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## *Establishing a Small College Budget*

...becomes an annual concern for every administrator of the small institution. In the March issue Joseph W. Getzendanner of Trinity College describes the way departmental budgets are developed and the responsibility of the administration in the adoption and enforcement of the budget when it is finally completed.

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# **INSURANCE** *is a safeguard for college finances*

IN THE OPERATION OF A MODERN business enterprise, it is fully as important to have insurance as it is to have working capital itself. No lender of money would consider a mortgage on real estate without having the buildings properly insured against loss by fire. No lending agency would think of advancing money for the purchase of a motor vehicle without first arranging for the proper insurance against loss by fire, theft or collision. It would be difficult for our nation's business to continue for even a 24 hour period if all insurance should cease to exist.

Although the operation of a college or a university is not a business in the same sense as is the operation of a mercantile or a manufacturing establishment, there is no denying the fact that it is a business.

## **MORAL RESPONSIBILITY**

There seems to be a common impression among people in general that insurance companies have a limitless supply of money for the payment of claims. I have known of cases of ordinarily honest people who think it perfectly proper to get all the money they can, if it is from an insurance company, whether or not they are morally or legally entitled to it. The money paid out in claims comes originally from the pockets of the people who purchase insurance; as claim payments increase, insurance premium rates increase accordingly.

The best insurance companies constantly are seeking means of improving their services, broadening their insurance policies, reducing losses, and thereby reducing rates. For this purpose organizations have been formed among the various fire and casualty insurance companies. These associations, or bureaus, receive the experience data submitted to them by all member companies and, after making a careful study of the facts, they may establish new rules and rates that will be used by the member companies.

For illustration: If the experience data from all member companies show

From an address at the meeting of the National Association of Educational Buyers, Boston, 1949.

## **W. STEWART McCREADY**

Business Manager, Geneva College  
Beaver Falls, Pa.

that plate glass losses have been noticeably reduced in a particular area during a specific period of time, the rates on plate glass insurance will be reduced for that area. If, on the other hand, the losses have been increased, the rates will be increased. The fire insurance associations conduct testing laboratories that make exhaustive tests on all equipment and materials submitted to them and either approve or reject the items tested. The entire cost of operating these testing laboratories is borne by the member companies of such associations or bureaus. This is only a part of their public service in fire prevention work.

Insurance companies are divided roughly into three groups: life, fire and casualty. Although some companies deal directly with the public, the usual method of operation in the United States is through the services of agents or brokers and they, in turn, with the customers.

## **FIRE INSURANCE**

Every owner of physical property has a vital need for fire insurance. In order to determine how much fire insurance our institutions need, we must know the total value of all buildings owned by the college or university, and a total value of all the furniture, fixtures and equipment contained in these buildings.

During the past few years, building costs have been rapidly increasing and, for that reason, the replacement value of buildings has changed materially during the same period of time. A building that was considered to be worth \$100,000 only 10 years ago now might be worth \$125,000 or \$150,000, or even more. In order to obtain the most favorable rate and also the proper coverage, it is necessary to carry an amount of insurance not less than 80 per cent of the total value of the buildings insured. The most satisfactory way of determining true values of buildings and contents is to have ap-

praisals made by companies that make that their business.

Fire insurance may be written either on a "specific" basis or on a "blanket" basis. For most colleges or universities, the blanket form is preferable. In the specific form of insurance policy, a certain stated amount of insurance applies to each building insured, which is usually not less than 80 per cent of the value of the building. By insuring a number of buildings under the blanket form of policy, a total value of all buildings is ascertained and the amount of insurance thus required is not less than 90 per cent of the total value. Since there is a considerable distance between buildings on most campuses, it is unlikely that two or more buildings will be destroyed by a single fire.

As an illustration, we might consider a small college that has five buildings rather widely separated, each valued at \$200,000, making the total value \$1,000,000. If the specific type of insurance is used, each building would undoubtedly be insured for \$160,000, which is 80 per cent of the value of the building. If one building were completely destroyed by fire, the maximum reimbursement would be \$160,000. If a blanket insurance policy were obtained covering all five buildings, the amount of insurance purchased would be 90 per cent of \$1,000,000, or \$900,000. The maximum reimbursement under such a policy for the total loss of one building would be not \$160,000 but \$200,000. Of course, if it were conceivable that all five buildings could be destroyed by one fire, the maximum payment under the blanket policy would be \$900,000.

Another advantage of the blanket type over the specific type of insurance for colleges is the fact that, although there are frequent transfers of furnishings and equipment from one building to another, no adjustment needs to be made in the blanket policy as long as

the total value of the insured property is not increased. Under a specific policy, if the contents of one building are transferred to another building, and the amount of insurance is not adjusted, the person responsible for taking care of the insurance might find himself in an embarrassing position, should even a partial loss occur.

Another coverage that should never be omitted from a fire insurance policy covering buildings and their contents is "extended coverage," which provides for protection against loss by wind, cyclone, tornado, hail, explosion (other than boiler explosions), riot, riot attending a strike, civil commotion, aircraft, smoke and vehicle damage. The rates for this coverage are extremely low and this type of insurance can be written only in connection with a fire insurance policy.

Other forms of insurance which are written by fire insurance companies and which are needed by at least some colleges and universities are vandalism and malicious mischief insurance, unearned premium insurance, rent insurance, rental value insurance, and extra expense insurance.

Under a fire insurance policy, when a loss has occurred and reimbursement has been made by the insurance company, the amount of insurance in force for the remainder of the policy period is reduced by the amount of the loss that was paid. As soon as repairs have been completed, the amount of insurance should again be increased to the original amount. To do so requires the payment of an additional premium. Unearned premium insurance makes provision for the payment of the additional premium required by the insurance company and without any additional costs to the insured. The rate is almost negligible.

#### RENT INSURANCE

Rent insurance is needed by colleges and universities only if they rent some of their property to other enterprises. This type of insurance provides them with an uninterrupted source of income from the building so insured, even though the tenants fail to pay the regular rent because the premises have been made untenable by fire.

Another type of insurance that is valuable when, because of a fire, operations must be carried on in another location is what is known as extra expense insurance. Because of the fact that operation must be carried on at another location, it may be necessary

to transport employes or students to the temporary location and thus incur extra expenses for which there is no provision under the types of insurance mentioned previously. If, for example, a science building were destroyed by fire and arrangements were made to use a high school laboratory several miles distant from the college, it might be necessary to hire buses to transport the students to and from that laboratory.

#### LIABILITY INSURANCE

Although in some states there is some question as to whether schools can successfully be sued in questions of liability, the courts in general seem to be more and more inclined to the interpretation of law holding educational institutions liable for negligence as much as they do other businesses. Many public school districts and colleges feel the necessity of carrying general liability insurance. The owner of real estate has, in the eyes of the law, a responsibility to keep his premises in proper condition in order to protect the physical welfare of members of the public, including guests and even trespassers.

Although separate policies may be obtained affording liability protection in connection with the premises or business operations, the operation of elevators, the liability in connection with construction projects performed by contractors, the sale of food and other products, and others, the policy known as the comprehensive general liability policy gives the maximum insurance at a minimum cost. In my opinion, it is the only kind of a general liability policy that colleges and universities should consider.

The very nature of public liability makes it almost impossible for anyone, even experts, to recognize all the liability hazards that may exist and, because this is true, the owner of the insured property cannot be assured of complete liability protection either by separate policies or by a schedule policy in which all the known hazards are listed. Comprehensive policies cover everything except that which is specifically excluded, whereas other policies cover only the hazards described without provision for the "unknown hazards."

Another form of liability insurance that is needed by most colleges and universities is automobile liability insurance. In such insurance there are three general classifications: (1)

owned automobiles; (2) hired automobiles, and (3) nonowned automobiles. The first two classes are well enough known to require no further comment. The nonowned automobile exposure perhaps needs some explanation.

If an employe of a college is operating a motor vehicle, which is neither owned nor hired by the college but is on a business errand for the college, the college can be held liable for the act of that operator. Frequently, a member of the staff or faculty does errands for the college using his own automobile. If the owners of such automobiles have the usual automobile liability insurance policies, protection is afforded to the owners and also to the college. However, if the operator of such motor vehicle does not have automobile liability insurance, the college may be liable and, if a suit is brought, judgment may be obtained against the college.

#### OTHER AUTOMOBILE INSURANCE

The most nearly complete automobile liability insurance coverage available is what is known as the comprehensive automobile liability policy. It includes not only the three classes mentioned above but also any unknown automobile liability exposure.

A type of automobile insurance that is familiar and needs little comment is the automobile physical damage policy. The comprehensive fire and theft coverage is far superior, in most instances, to the ordinary fire and theft coverages, and the rates for it are only slightly greater. Automobile windshields are frequently cracked by stones or pebbles from passing trucks; windows get broken from unknown causes; steel bodies are often damaged by falling trees, branches or other objects, and, in some places, floods cause much damage to automobiles. The comprehensive fire and theft insurance will provide reimbursement for all such losses, but fire and theft insurance will not do so. The comprehensive automobile liability policy and the comprehensive automobile fire and theft policy are two entirely different forms of insurance even though the word "comprehensive" is used in both.

An extremely important type of insurance for colleges and universities is theft insurance. Large amounts of money are on the premises of the college, particularly on registration day, and frequently money is kept in the college safes overnight. To the un-

informed layman, there is no distinction between burglary and robbery and theft. For the purpose of insurance there are distinct differences.

Burglary insurance will provide reimbursement for losses only when the building or safe in which the insured property is kept shows visible evidence of forcible entry. A broad-form money and securities policy affords protection against loss of either money or securities while on the premises of the insured from any cause whatsoever, and any loss of money or securities while away from the premises and while in the custody of a messenger. This policy, like the comprehensive liability policies, is designed to provide blanket coverage and fills in the gaps left unprotected by individual policies. Sometimes this broad-form money and securities policy is incorporated as a part of a policy known as the comprehensive 3 D, or the disappearance, destruction and dishonesty policy, which also includes fidelity bond coverage and forgery coverage. It is worthy of note that in practically all burglary, robbery and theft policies the rate depends on the kind of business enter-

prise covered by the insurance. Colleges and universities are eligible for the lowest rates.

#### FIDELITY BOND PROTECTION

Fidelity bonds constitute a type of insurance separate and distinct from all other kinds of insurance. The protection afforded by fidelity bonds is a protection against loss that may remain hidden for years. It has been estimated that losses to American business concerns resulting from dishonesty of their employees amount to more than \$400,000,000 annually, of which only a small fraction is covered by insurance. Many of these losses occur where they are least expected and by officials whose characters are unquestioned. Since it is impossible to determine which of the employees might cause the loss, it is usually more desirable to obtain a blanket bond covering all employees. The two types of blanket bonds that are available are the primary commercial blanket bond and the blanket position bond, both of which are perhaps equally good.

Other kinds of insurance are often desirable and sometimes necessary for

educational institutions. Workmen's compensation insurance is essential for all schools. Plate glass insurance is needed only in cases in which there are either plate glass or stained glass windows of considerable value. It is not practical to insure ordinary windows. Health and accident insurance and hospitalization insurance for students are primarily services that are provided for the students except in the case of varsity athletics. They then become of financial concern to the institution, and insurance is a valuable protection against serious losses.

If valuable paintings or similar works of art are owned or exhibited by a college, a fine arts floater policy may be needed. This type of policy is what is known as an "all-loss" policy and affords protection against loss from almost every cause, including fire.

Your insurance agent or broker should be selected because of his ability and not just because he is an alumnus of the school or because he makes regular contributions to the institution. He is able to obtain expert advice on insurance matters from the companies he represents.

### Survey of College and University Building Costs

College	Function	Type Construction	Total Cost	Total Cubage	Cubic Foot	Contract Cost for			Approximate Wage Rate					Date of Contract Award
						Gen. Construction	Heating, Plumbing	Electrical	Electricians	Bricklayers	Masons	Plumbers	Carpenters	
Univ. of Ala.	Physics	Brick	\$457,658	590,958	\$0.77	.....	Lump Sum	.....	Sub-cent.	\$2.25	\$2.25	Sub-cent.	\$1.65	Apr. '49
Univ. of Ala.	Engineering	Brick	297,332	593,000	0.50	.....	Lump Sum	.....	Sub-cent.	2.50	2.50	Sub-cent.	1.65	July '49
Univ. of Ala.	Women's Dorm.	Brick	301,998	378,145	0.80	.....	Lump Sum	.....	Sub-cent.	2.25	2.25	Sub-cent.	1.65	Dec. '48
Univ. of Ala.	Alumni Hall	Brick	100,427	116,815	0.86	.....	Lump Sum	.....	Sub-cent.	2.25	2.25	Sub-cent.	1.65	Dec. '48
Grinnell College	Offices, Classrooms and Labs	Stone structure, steel, concrete	485,300	466,635	1.04	\$380,530	\$80,470	\$24,300	\$1.90	2.50	2.50	\$2.25	1.75	1949
Georgia Tech.	Research Bldg.	Reinforced concrete, brick facing	315,000	261,290	1.21	165,429	\$94,328 \$17,343	29,900	2.25 2.50	2.25 2.50	2.50 2.75	2.50 2.75	1.85 2.10	Sept. '49
Lincoln Univ.	Men's Dorm.	Brick, stone, concrete	333,170	260,000	1.28	246,670	75,000	11,300	2.25	2.50	2.50	2.00	2.00	Aug. '49
S. W. Mo. State College	Student Union	Fireproof	600,000	500,000	1.20	432,000	68,905 13,800	39,463	2.00	2.50	2.50	2.25	1.87	Sept. '49
S.W. Mo. State College	Women's Dorm.	Brick, stone, steel joists	200,580	170,000	1.18	164,865	11,715 13,500	10,500	2.00	2.50	2.50	2.25	1.87	Jan. '49
Okla. City Univ.	School of Religion and Library	Reinforced concrete, steel	520,000	584,064	0.71	Cost plus	Cost plus Cost plus	Cost plus	2.50	3.00	3.00	2.37	2.12	Oct. '40
Illinois Tech.	Laboratory	Concrete-masonry	448,393	447,552	1.00	283,263	93,745	46,275	2.42	2.40	2.40	2.35	2.35	Mar. '49
Illinois Tech.	Laboratory	Steel-masonry	454,637	414,200	1.01	345,106	31,000 17,965	34,829	2.42	2.40	2.40	2.35	2.35	Mar. '49
Illinois Tech.	Heating Plant	Steel-masonry	246,535	218,624	1.13	223,384	None 9,916	None	2.42	2.40	2.40	2.35	2.35	Nov. '40
Illinois Tech.	Apartments	Concrete-masonry	1,052,160	787,877	1.33	793,885	148,497	35,827	2.42	2.40	2.40	2.35	2.35	July '48
Univ. of Tex.	Experimental Sciences Bldg.	Fireproof, concrete frame, brick and stone exterior, tile roof	4,019,107*	2,754,000	1.46	2,052,577	965,954	214,674	2.25	2.25	2.25	2.25	1.75	Dec. '48
Univ. of Tex.	Student Health Center Bldg.	Fireproof, concrete frame, brick and stone exterior, tile roof	1,414,839†	670,000	2.11	948,492	208,693 107,444	63,866	2.25	2.25	2.25	2.25	1.75	Dec. '48

\*Includes Laboratory Equipment Contract and Architect's Fees.

†Includes Medical Equipment, Refrigeration Contract and Architect's Fees.

*Ideas on the operation and layout of an*

## AUDIO-VISUAL EDUCATION CENTER

**HELGE E. HANSEN**

Assistant Director  
Audio-Visual Education Center  
University of Michigan



THE ABILITY OF EDUCATIONAL INSTITUTIONS to absorb and utilize new ideas has always lagged behind research by a period of 25 to 100 years. It was not until 1937, through the foresight and initiative of the late Dr. Charles A. Fisher, that the bureau of visual education of the University of Michigan was born.

From a humble beginning of some 100 films, mostly "silents," and 250 sets

Left: Old storage room showing terrific crowding and extreme height of wooden storage racks. Below: What was accomplished with racks designed and engineered for the job.



of glass lantern slides, the center has grown to approximately 5000 films on 1750 titles, a filmstrip library, many recordings, 25 sets of large art reproductions, and is now producing films and filmstrips for the high school and university level.

In order to get some semblance of a budget a \$50 membership was originally sold to the schools of Michigan in April and May which would allow these participating schools to rent \$70 worth of materials throughout their school year. The second year netted some 135 memberships, and the plan has grown so rapidly that the 1949-50 membership will possibly reach 1000.

Because of the increasing costs, the "\$70 for \$50" has now changed to a straight 15 per cent discount to all member borrowers. The membership method has produced a close liaison between the center and the schools of Michigan. It also is available to other organizations, such as the churches, industry and labor organizations.

Growth in the space requirements has been equally impressive during the last 13 years. Starting in an anteroom of the University Extension Service, the bureau was moved into two rooms, then four rooms of old North Hall. The accompanying pictures illustrate the crowded condition of these quarters.

About 1946 plans were drawn up to construct a centralized administration building for the university. The bureau was included in this new building. In January 1949 these new quarters were ready for occupancy. They include a general office and counter; two private offices; a film inspection, shipping and receiving room; a large storage room; a production room, and a theater-projection room seating 86 people.

By 1947 it had become evident that the unofficial title, "bureau of visual education," was not adequate. Likewise, it was also evident that audio-visual education was not a part of the extension service alone; as a matter of fact, many of the activities, espe-



These photographs tell a typical "before" and "after" story. Above: Old North Hall with its inspection table where four people worked at once.

Below: The new inspection room with its individual work stations, contributing considerably to the appearance and efficiency of the film bureau.





The new general office of the audio-visual education center. Here accurate records are kept of all filmstrips, exhibits, slides and art reproductions.

cially preservice and in-service education for teachers, centered in the school of education. Another large area of responsibility involved the campus itself, which has doubled its demands on the center during each of the last four years. Consequently, the name was officially changed to the audio-visual education center, and it was set up as a major division of the University of Michigan with a governing board consisting of the directors of the extension service, library service, bureau of school services, and a faculty member chosen at large. This was indeed real growth.

The operation of the center has consistently changed and grown. Until 1945 the director operated the audio-visual education center with a clerical staff and taught the related courses in the school of education. Either of these jobs could have demanded his full time. In 1946 an administrative assistant was added to the staff; then in 1947 an assistant directorship was created. Next, a museum consultant and, finally, a production supervisor have come to round out a professional staff of five persons. Recently, all campus projection has been placed under the supervision of the center with two full-time projectionists and a staff of part-time students. To operate the office routine has meant an expanding staff of inspectors, shippers, stenographers, typists, bookers and bookkeepers, and the acquisition of adequate equipment.

The accompanying illustrations show a part of the new general office setup

with its array of bookers, the film storage room with its new steel storage racks, and the inspection room with its specially constructed steel inspection tables. It will be noted that the steel film storage racks are placed two units in length and four units, back to back, in a group. This arrangement permits complete access to these racks from all sides. Consecutive numbering of the film spaces was done by a numbering machine. Twenty-two of the racks were purchased originally, with three additional ones now being added. These racks are compact and may be rearranged and renumbered at will.

#### INCREASE SPEED AND EFFICIENCY

In the film inspection room four motorized rewinds and two electrically heated splicers, plus double width splicers, have reduced inspector fatigue and increased speed and efficiency.

All shipping slips that record materials out on loan by borrowers are kept in a consecutively numbered "out-drawer." It is a simple matter to check this drawer to see who has borrowed any material, when it is to be used, and when it should be returned. A record is kept on an inspection card of all material, describing its condition, who used it, when it was used, and who inspected the material after each use. These signatures are valuable in determining careless inspection procedures.

By placing storage space both above and below the inspection tables, the inspectors can store most of their materials until they have time to file

them. Filing and shipping have been greatly simplified by double decked, rubber tired carts that do away with the need to carry large numbers of films and other materials to and from the storage room. To complete the filing and storage system, we have begun to purchase especially constructed steel storage cabinets for filmstrips. These filmstrips also are numbered consecutively in their storage files.

Booking procedures have been simplified to the best of our ability. The booking sheet that meets our peculiar needs requires a minimum of writing. Such items as method of shipping, membership and date require only a check by the booker. The booking calendar and its tab covers one school year on each side of the sheet. Therefore, these booking calendars are made out every other year. By means of the loose tabs that are held in the pockets of the open file, all pertinent information can be seen at a glance. These tabs, by the way, are good for the life of the film.

At the present time the filmstrips, exhibits, slides and art reproductions booking calendars are kept in three loose-leaf notebooks. Since the booking calendar cards and their tabs are often open faced, such important information as date of purchase, original cost, producer, print number, rental rate, color or black and white, as well as the title and print copy, is kept on each one. It is the basic file of the office.

Booking confirmations are made out in triplicate. The original is sent to the borrower; the second copy with an address label is placed in the shipping file in date order, later to be used for shipping purposes at which time it is kept in the "out-drawer" and ends up finally on an inspector's table with the inspection cards; the third copy is the bookkeeper's record to be used for posting against the customer's account. All orders are consecutively numbered by machine. These numbers are of value in following orders in bookkeeping records.

The present audio-visual education center has not progressed to its present status without many difficulties and problems. It has often meant long hours of work on the part of those in charge. Careful planning, budgeting and cooperation with other university units have placed the center in a unique and strategic position on the campus and in the state.



## T.C.U.'S AUDITORIUM AND FINE ARTS BUILDING

THE AUDITORIUM AND FINE ARTS building at Texas Christian University includes three floors and a basement, together with an adjoining little theater. The structure, of face brick with stone trim, Colonial style of architecture, completely fireproof, soundproof and air conditioned, cost \$1,500,000, including equipment.

Floors are terrazzo and asphalt tile, except for a wood covering in soundproof studios. Walls are generally plaster; ceilings and walls are of suspended metal lath and plaster with additional perforated fiber acoustical board on the ceilings; the colors are pastels.

Equipment includes a summer and winter air conditioning system with mechanical refrigeration; lighting is fluorescent. There is a general intercommunication system, together with intra-telephonic connections.

The auditorium is in the center of the building, and the little theater is across the back of the main structure. It has its separate entrance, in addition to corridor connections with the main building. Outside dimensions are 149 feet front and 239 feet deep.

The building houses the school of fine arts and provides auditorium facilities for general university functions. The school of fine arts embraces the departments of art, music and speech-drama. Subdivisions are painting, interior design, commercial art,

### T. SMITH McCORKLE

Dean, School of Fine Arts  
Texas Christian University

crafts, ceramics, art education, and allied subjects; applied music, theory, music literature, music education, and allied subjects; speech, speech correction, acting and stage craft, forensic and radio, with allied subjects.

#### DISTINCTIVE FEATURE

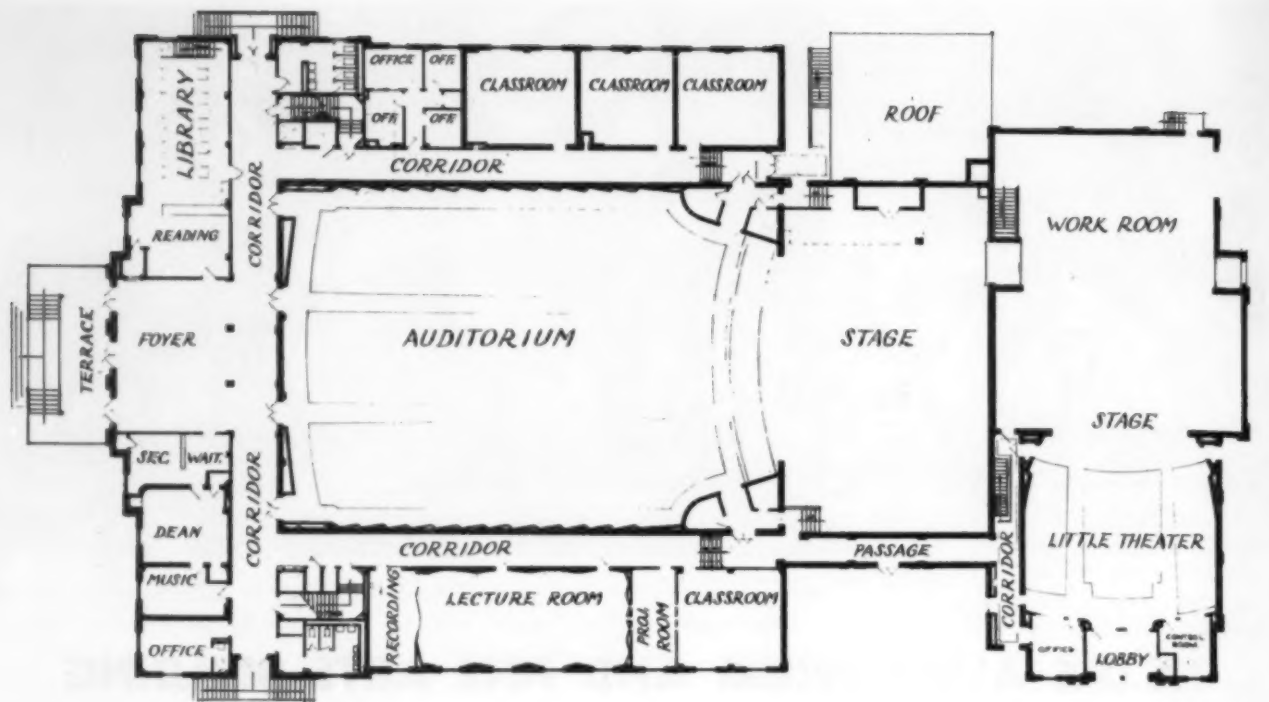
The auditorium, with a seating capacity of 1250, has a stage large enough for the presentation of opera. Its orchestra pit seats a full symphony orchestra and houses a four-manual organ. Architectural conformity with the remainder of the campus made it impossible to include a fly loft for the auditorium. This led to one of the distinctive features, a specially designed collapsible shell of plywood. Modernistic in contour, this shell fits the stage for all normal functions, including concerts. Suspended on tracks from above, it can be removed within a short time. The ceiling lets down in 4 foot sections, and between these sufficient lines are available to re-set the stage for necessary operatic scenery. The organ chambers are flush with the proscenium at the left of the stage, the floor of the organ room being 9 feet above stage level. One of the stage

craft workshops connects the stage of the auditorium with the stage of the little theater.

The theater has a seating capacity of 224. Remote lighting control for the stage emanates from an enclosed booth in a rear corner of the auditorium. The other rear corner houses an electric organ, with speakers at either side of the proscenium. This stage has a complete fly loft and is laid with tracks for scenery wagons. The workroom immediately back of the stage is connected by elevators with a workshop in the basement which houses the power tools for stage craft.

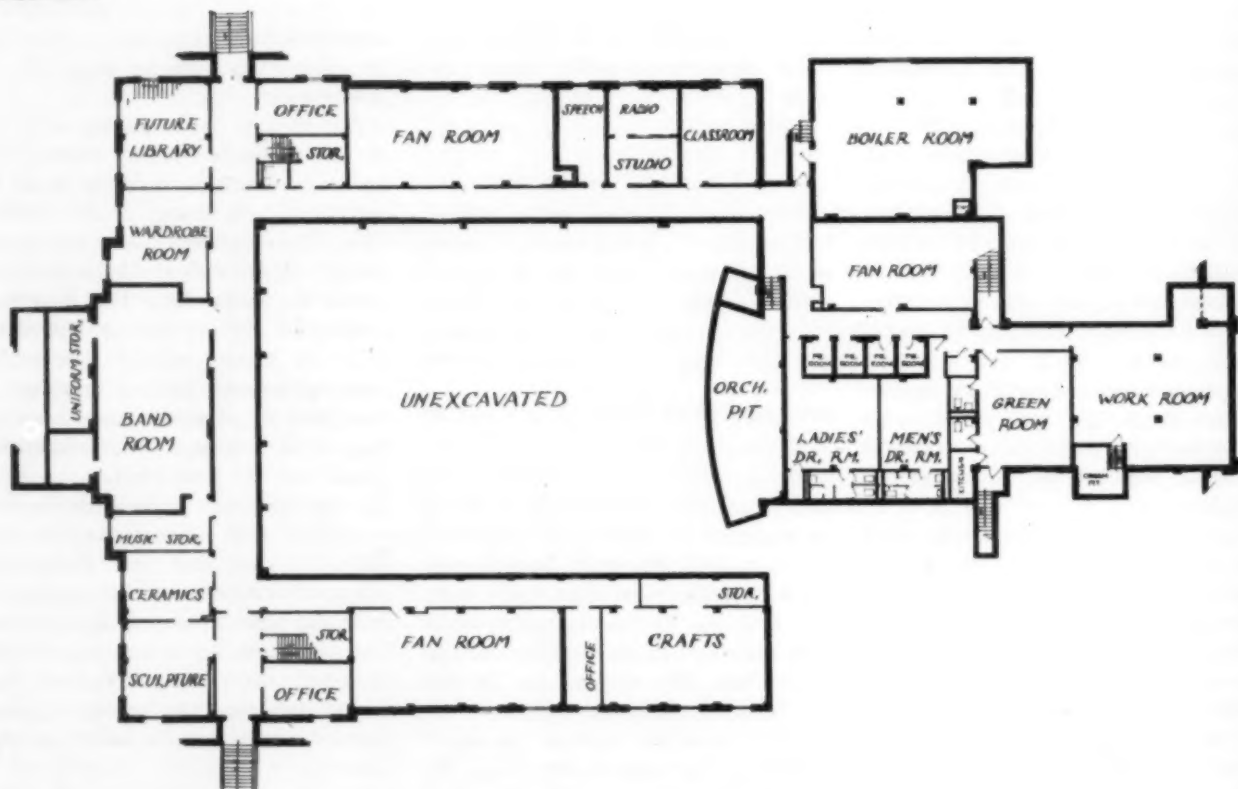
From the front of the little theater a corridor and stairway lead to the Green Room and an electrically equipped kitchen in the basement. From the stage a stairway leads to the basement dressing rooms, completely equipped, including lavatory and shower facilities. A few soundproof practice rooms are included in the basement.

In this portion of the building are a specially designed and constructed band rehearsal room to accommodate an organization of 100 pieces and storage facilities for instruments, music and uniforms. The basement also houses the wardrobe room for the theater, the lower floor of the school library, speech correction laboratories, radio workshop, a large workroom for crafts, the ovens for ceramics, a room



FIRST FLOOR

BASEMENT



for theater scenic design, and the work in sculpture.

The first floor, in addition to the auditorium, includes administrative offices, the upper floor of the school library, offices, classrooms and the main radio studio.

The library in the fine arts building houses library equipment, such as records, scores, slides, prints, musical in-

struments, and the like, together with certain rare works and books frequently used in research. However, the bulk of the research material reposes in the university library.

The radio studio consists of a completely equipped control room, together with excellent recording devices, and the studio proper. At the rear of the studio, which seats 110, is

a projection room from which the machines may serve either the studio or an adjoining classroom. The studio is utilized, in addition to radio work, for certain lecture courses requiring projection, and for small recitals. The university does not contemplate a broadcasting station but loops have been installed in order that local stations may pick up programs. The

equipment is such that these programs can be carried directly to the transmission plant, thus eliminating the necessity of a remote control setup.

One of the classrooms on the first floor is equipped with mirror paneled walls for ballet.

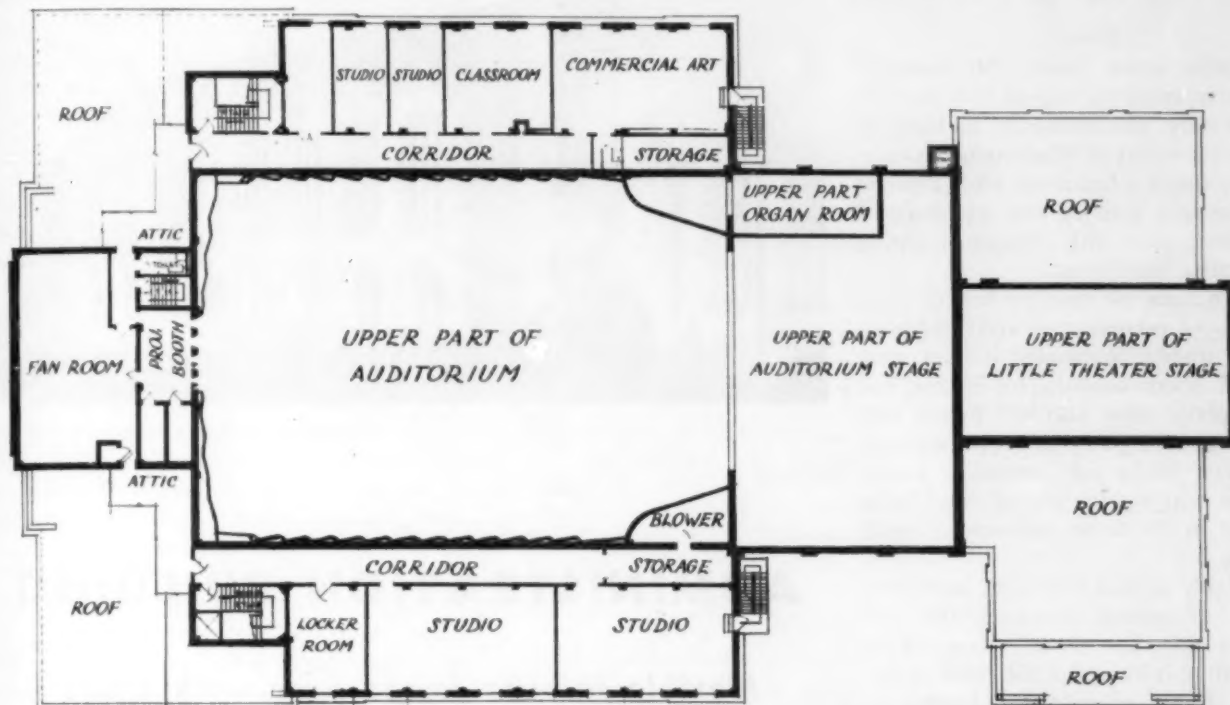
The second floor houses a large art gallery and an instruction room for

interior design. The remainder of the floor is given over to music studios, practice and listening rooms, and offices.

The third floor consists of a north and south wing only, flanking either side of the auditorium walls. The wing on the north side accommodates painting studios, together with locker rooms

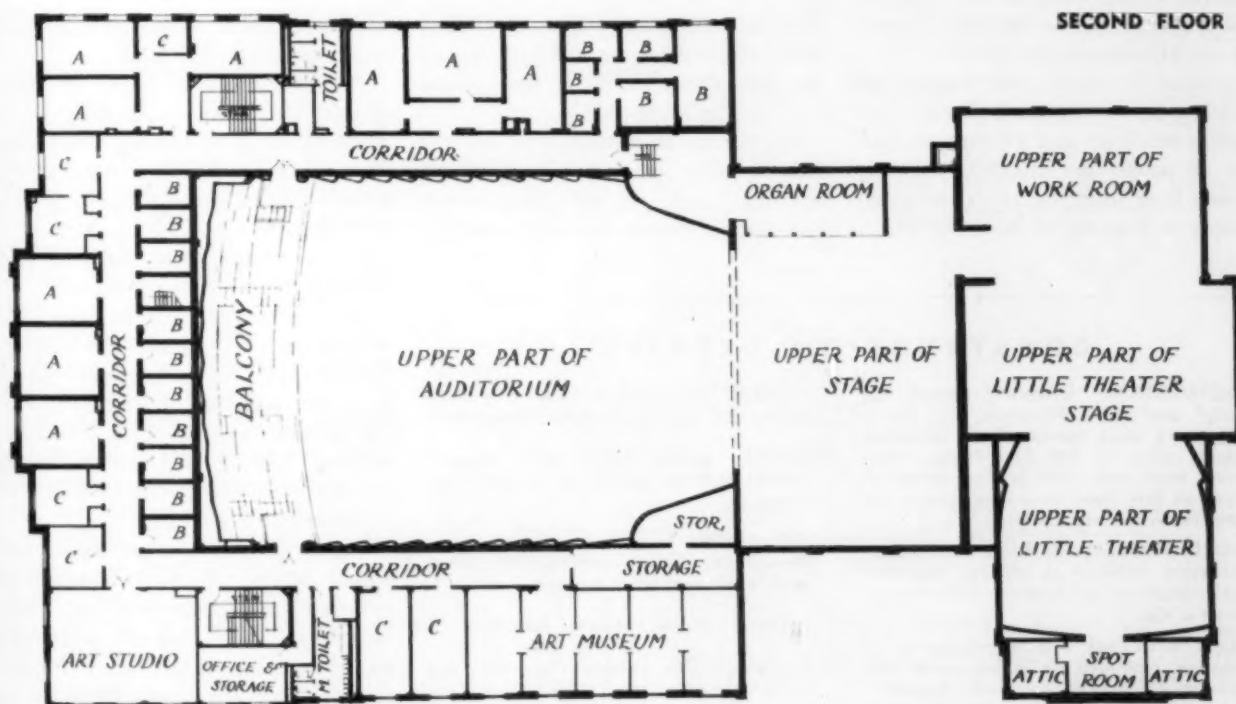
and storage facilities; the wing on the south, commercial art, together with additional studios and practice rooms.

Every effort was made to design a structure that would lend itself not only to efficient teaching but to a closer and logical correlation between the work in the various departments and divisions of the school of fine arts.



THIRD FLOOR

SCALE - 0 5 10 20 30 40 FEET



SECOND FLOOR

A-SOUNDPROOF STUDIO  
B-SOUNDPROOF PRACTICE ROOM  
C-OFFICE

SCALE 0 5 10 20 30 40 FEET

## ERNEST M. CONRAD

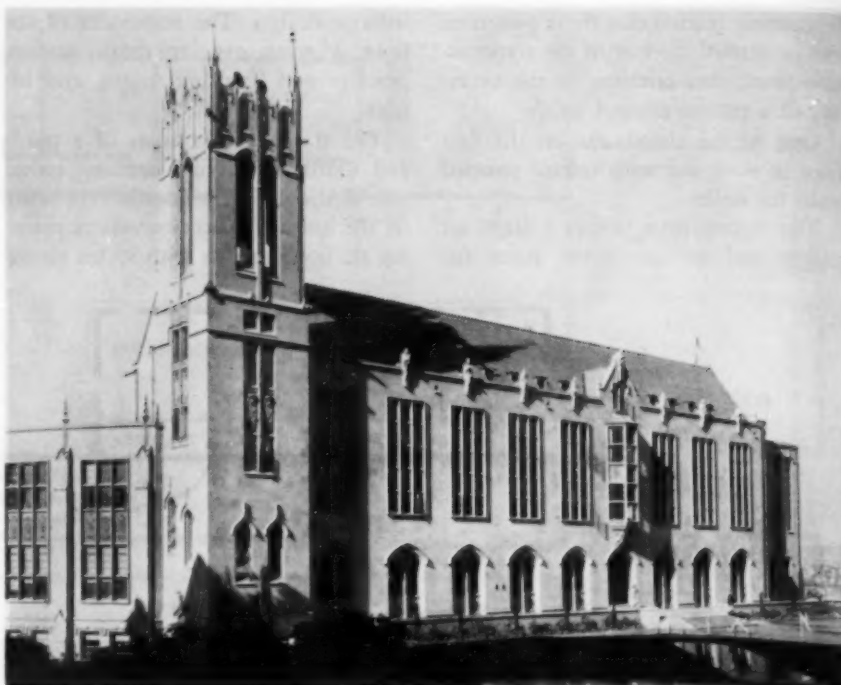
Assistant Comptroller  
University of Washington

WHEN MORE THAN 250 ADMINISTRATIVE employees moved into the new five-story administration building at the University of Washington recently, they found a functional office arrangement in a building that was designed to keep pace with changes in administrative operations.

To make the structure flexible, easy-to-move partitions of wood and glass and smooth, suspended ceilings were used. Floor conduits for electric and telephone cable also will permit easy changes. Large, open workrooms with private offices only for major executives carry out the general trend being used in the latest commercial buildings.

Easily accessible to both on-campus and off-campus personnel, the five-story gray cast stone administration building is located in the physical center of the university and borders on the liberal arts quadrangle and the library building, where student traffic is most concentrated. When the new entrance to the campus is completed, this building will be the first to meet the eye of students and visitors.

Unique in shape and design, the building has two ground levels. This enables employees and off-campus visitors to enter the building on the ground floor from the south and to go directly to business or executive offices



## ADMINISTRATION BUILDING

*Flexible interior keeps pace with times*

without encountering lines of student traffic. Students enter the building on the first floor, which is the ground level on the north side.

On the lower ground level are the housing office, graduate school offices, buildings and grounds department, locksmith, Veterans Administration co-

ordinator, locker room and lunchroom, with adjoining rest rooms.

The entire first floor, or upper ground level, thus is available for the many activities of the registrar's office. This office has been arranged so that service may be given to the individual as well as to the mass of students. A spacious lobby, 22 by 80 feet, is in front of the registration windows.

The admissions' office and transcripts' office have smaller private lobbies of their own, so that students can be given individual service away from the general group. A large circular sections' room to the west of the registration windows greatly facilitates the registration of students.

On the second floor are the summer school offices, office of nonacademic personnel, and the comptroller's offices, including cashiers, pay roll, accounting and purchasing departments. Modern cashiers' cages overlook a lobby similar to the one on the floor below, and large central file rooms on both the first and second floors provide efficient

### CONSTRUCTION DETAILS

**CONSTRUCTION:** Entirely fireproof. Exterior, cast stone. Partitions, clay tile or wood and glass combination. Tennessee marble pillars in first floor lobby. Windows, steel sash with leaded cathedral glass on first floor. Stairways, quarry tile with Tennessee marble trim.

**FLOORING:** Quarry tile floors in corridors; battleship linoleum in offices. Executive suite, carpeted wall to wall. Toilet rooms, ceramic tile.

**WALLS:** Birch, oak and American walnut paneling, desk high, on light green plaster walls in offices and corridors. Executive suite, paneled American walnut. Regents' room, paneled oak with birch and walnut trim.

**CEILINGS:** Suspended ceilings to conceal ducts and pipes. Acoustical treatment.

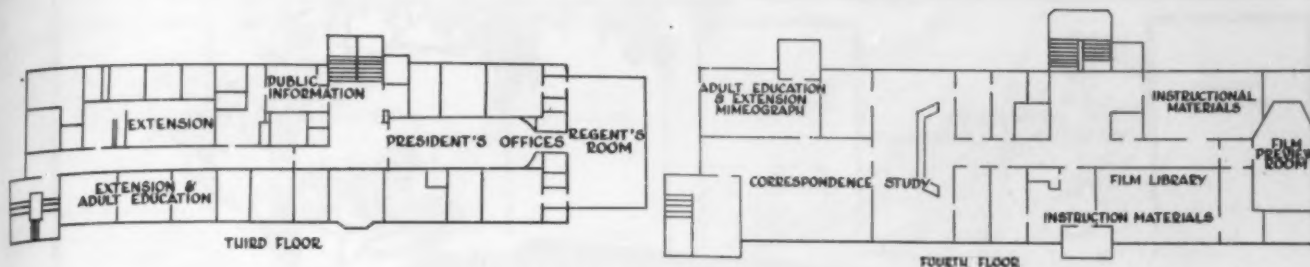
**HEATING:** Central power plant supplies radiant heating, augmented by wall radiation.

**VENTILATION:** Tempered air recirculated throughout. Electro-magnetic air filters used in air ventilating system.

**LIGHTING:** Indirect ceiling fixtures.

**ELEVATORS:** One passenger elevator; one freight elevator.

**COST:** \$1,560,000. 1,075,000 cubic feet at \$1.45 per cubic foot.



service for the offices of the comptroller and registrar. All rooms in which there is machine operation have been acoustically treated.

This arrangement of departments allows students to enter the registrar's office by the main entrance on the north side of the building, pick up their registration books at the windows on the south side of the lobby, go up the east stairs to the comptroller's office and pay their fees, and then come down the west stairs into sections where they complete their registration. This allows one continuous stream of student traffic during registration, thus enabling enrollment of 20,000 students per quarter without difficulty.

The offices of the president and other executive officers are located on the third floor, away from the noise and confusion that arise from the offices having most contact with the students and public. Overlooking the quadrangle, the president's office has a sweeping view of most of the campus. The regents' room extends the width of the building and has windows to the north, south and west.

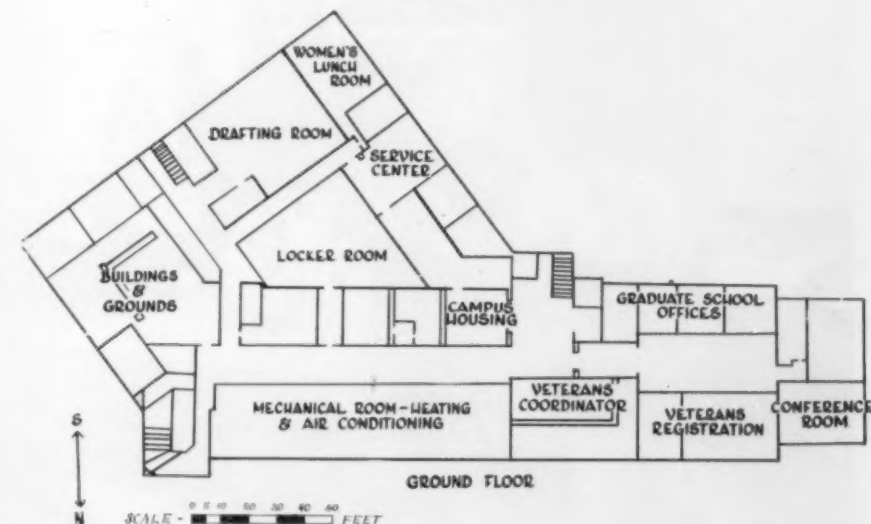
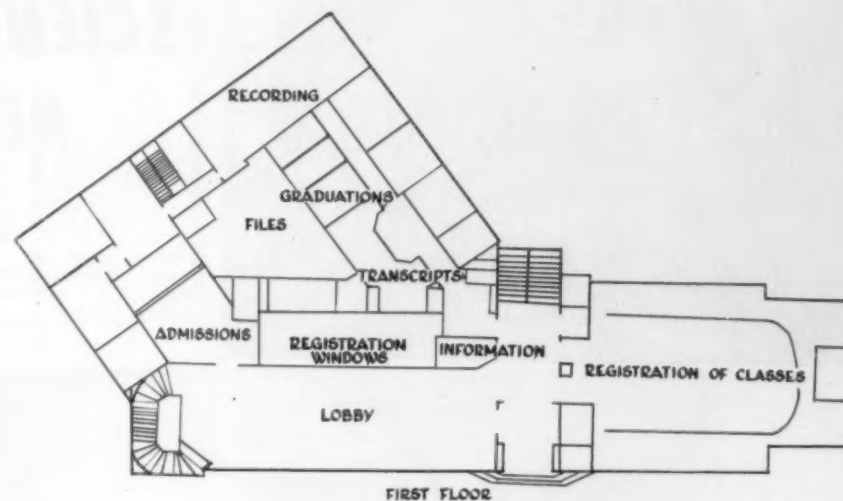
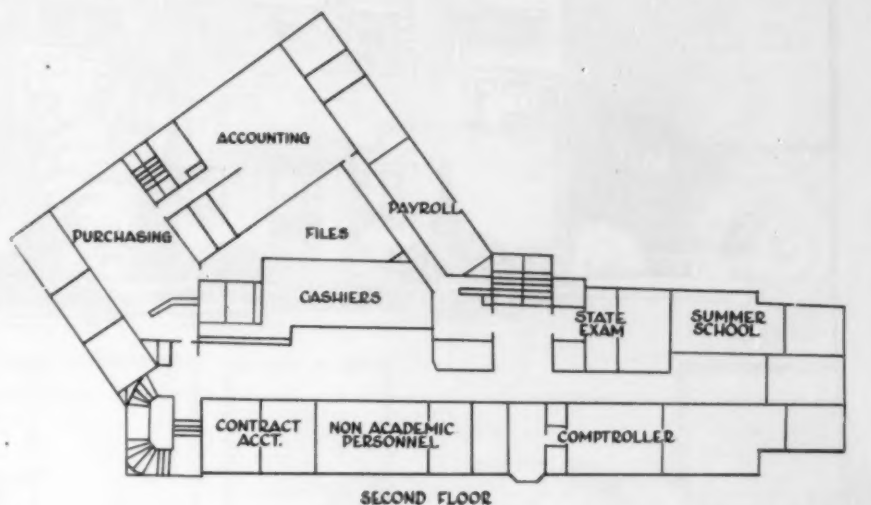
Sharing the third floor with the executive suite are the office of public information and the division of adult education. The fourth floor is occupied by the instructional materials office and the department of correspondence studies.

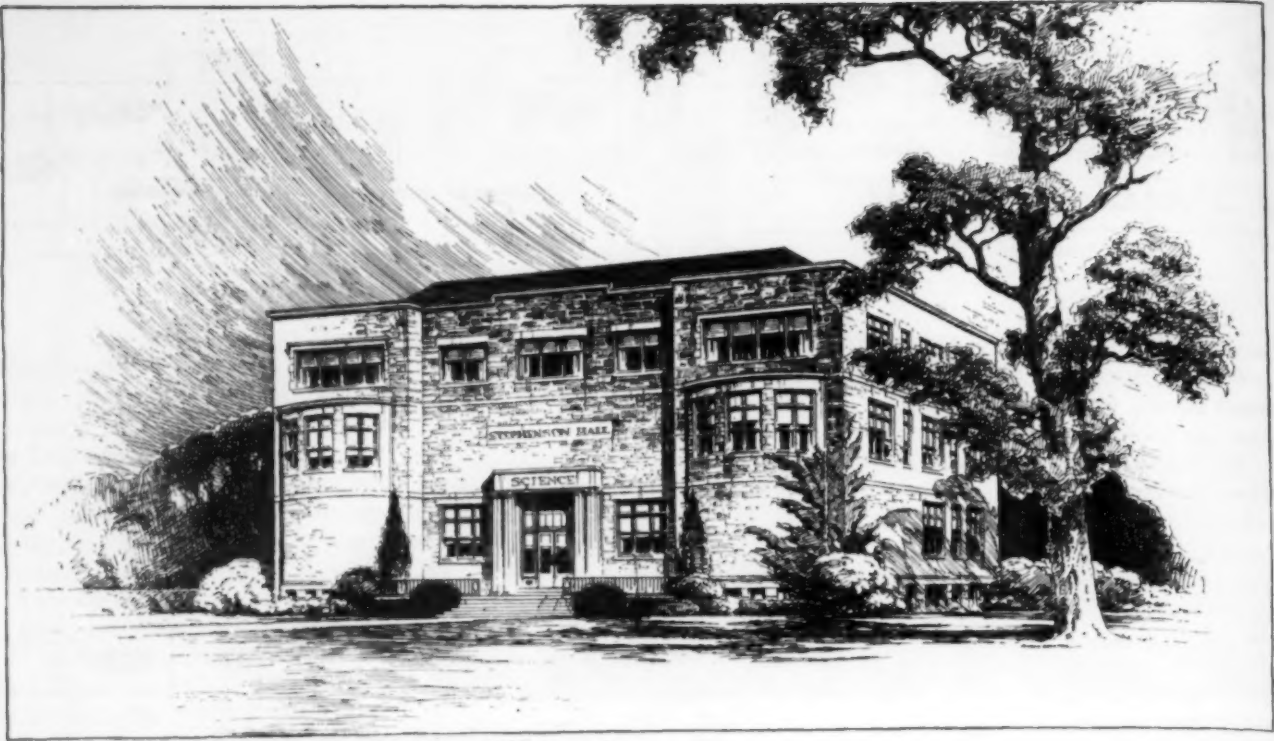
In the large basement are the university post office and central mail room, addressing machine center, several garages, and abundant storage space for administrative files.

Indirect lighting is used throughout the building. A central power plant provides heat, and electro-magnetic air filters are used in the air ventilating system. Both passenger and freight elevators have been provided.

In architecture the building is collegiate Gothic; it is class A construction throughout.

The designing architects were Victor N. Jones and Associates, and the supervising architect was John Paul Jones of Seattle.





## SCIENCE BUILDING REMODELED

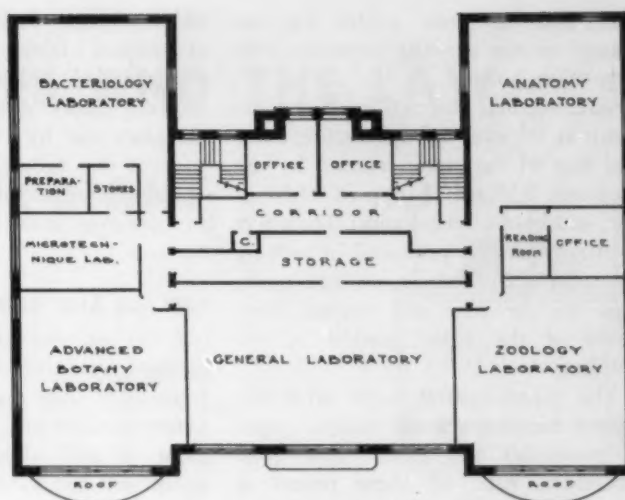
**RALPH J. WATTS**

Business Manager  
Lawrence College, Appleton, Wis.





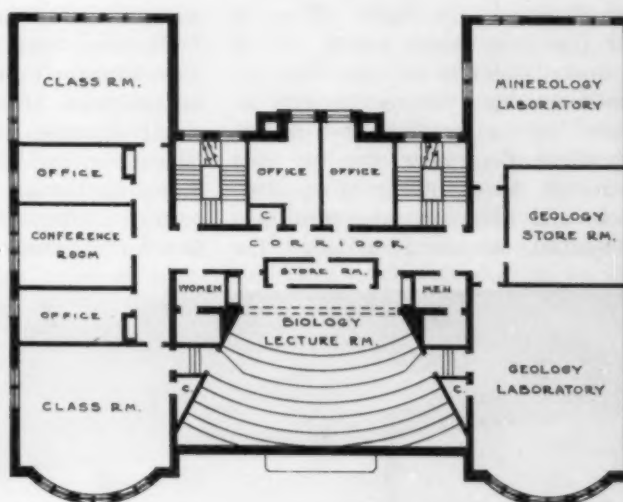
FIRST FLOOR PLAN  
SCALE 0 5 10 15 20



THIRD FLOOR PLAN  
SCALE 0 5 10 15 20



BASEMENT PLAN  
SCALE 0 5 10 15 20



SECOND FLOOR PLAN  
SCALE 0 5 10 15 20

THE IMPERATIVE DEMANDS FOR MORE laboratory and classroom space and for modern equipment to meet the established educational standards of Lawrence College resulted in the decision to undertake an extensive remodeling of the science building in 1948. For many years this had been regarded by the officers of the college as an improvement in its physical facilities that should and would be given high priority. The chemistry laboratories were remodeled and reequipped in 1937. The depression, followed by the war with the attendant restrictions on buildings of this kind, caused repeated deferments of the more extensive project.

Bids received from contractors in January 1948 indicated that the project would cost at least 50 per cent more than had been anticipated. Although this fact presented to the trustees a difficult financial problem, they decided not to delay longer the much needed improvement to the educational plant; in their opinion building costs would not recede in the near

future, nor would it be easier to raise money a year or two later.

The ground area of the old structure was approximately 8000 square feet. This was not modified or enlarged in any significant respect. Construction of the third or top floor of the building had been such as to provide relatively limited laboratory space, but by redesigning the exterior and interior of this section the usable floor area was greatly increased.

The entire exterior of the building, formerly of brick, was faced with 6 inch rough rubble Lannon stone, cut at the quarry to the size specified. To support this added weight a concrete foundation was poured around the old

On the Opposite Page: Top: remodeled Stephenson Hall. Center: As it looked before remodeling. Below: Students in the anatomy laboratory.

wall, and the stone veneer was anchored to the existing structure with expansion bolts.

Architectural distinction of the exterior is achieved by the texture, color and size of the stone selected by the architect, Richard Philipp of Milwaukee, and by the fenestration. The effect of massiveness is produced in part by the solid walls without window openings on the first and second floor levels of the front portion of the building.

The three lecture rooms were designed for the use of various types of projectors and other visual aids. Therefore, each of these rooms is lighted and ventilated artificially. One has been equipped with upholstered seats arranged on elevated platforms and is available for use by groups for extracurricular activities.

Economies were necessarily observed where practicable. Thus in the corridors, service rooms, and in a limited number of classrooms incandescent light fixtures formerly installed in the building were reused; elsewhere fluorescent fixtures were provided. Much of the office, classroom and laboratory equipment was reinstalled, temporarily at least. The

old hardwood floors in many of the classrooms, laboratories and offices were sanded and refinished. Tile or terrazzo floors were selected for all corridors and for the stairs and landings of the fireproof stair wells. Integral colored concrete floors were laid in basement areas not surfaced with terrazzo.

#### REPLACE AND ADD EQUIPMENT

Glass enclosed display cases for educational exhibits and demonstrations were built into the interior walls at numerous locations. Extensive replacement of and addition to laboratory equipment and fixtures were provided; these are of the most modern and highest grade construction, and wood rather than steel was selected. The building is serviced by modern lighting, heating and ventilating systems; insulated multiple glass is installed in all locations at the third floor level.

The remodeled structure now provides adequate instruction facilities for an institution of the size and educational objectives of Lawrence in 16 laboratories and six lecture and classrooms for botany, zoology, chemistry, geology, mathematics and physics. Offices for all members presently on the

staff and ample storage and service facilities also are provided.

In the latter part of March 1948 the dismantling of the old building had advanced to such a point as to require the moving of the first of the science laboratories to other locations on the campus; certain parts of the building were occupied until the close of college in June. The following October some of the laboratories were again ready for use, and all teaching operations were resumed on Jan. 1, 1949. While there was some inconvenience and some modifications in the normal program of classroom and laboratory instruction, these interruptions proved not to be of serious significance and were accepted in good spirit by students and instructors.

The original science building was constructed in 1889 and was then regarded as a most adequate teaching facility for an institution the size of Lawrence. The building bore the name of "Stephenson Hall of Science" because the generous contribution of Isaac Stephenson of Marinette, Wis., made possible the acquisition of this much needed building. The building continues to be designated by its traditional name.



One corner of the biology laboratory in the newly remodeled science hall at Lawrence College.

DURING THE PAST FEW YEARS MANY colleges have acquired modern equipment for photographic reproduction of manuscripts, typed and published documents. Thus, the hazard of inadvertent reproduction of such material without the consent of the owner of the document or of the copyright has increased substantially. A survey of current procedures on the typical college campus probably would reveal many violations of the copyright statutes and of the common law right of an author in his unpublished works.

Prior to the enactment of the famous Statute of Anne by the English Parliament in 1710, the only protection extended to an author was his common law right to the control of his own property. This right still exists. No one other than the owner has the legal right to reproduce an unpublished manuscript. Once it is published, it is in the public domain unless the author or owner has complied with the statutory provisions of the law of copyright.

#### NOAH WEBSTER STARTED IT

The American Constitution (Art. I, Sec. 8) authorized Congress "to promote the progress of science and the useful arts by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries." The first federal copyright statute was enacted in 1790, largely through the vigorous efforts of Noah Webster, seeking protection for the publication of his famous "blue-backed speller."

This first act extended protection only to books, maps and charts. In 1802 prints were added, musical compositions in 1831, dramatic compositions in 1856, photographs in 1865, paintings, drawings, sculpture, models and designs in 1870. The present law is based upon the Copyright Act of 1909, with only minor amendments.

In order to obtain the protection of this act, an author must see that the word "copyright," followed by the year and the name of the copyright owner, appears on the title page, or its back, of every copy of his book. Two copies of the work, together with an application and fee for registration, must be sent promptly to the Register of Copyrights, Washington, D.C. This registration assures exclusive rights in the publication or other reproduction of the work for a period of 28 years,

## COLLEGES AND THE LAW OF COPYRIGHT

**T. E. BLACKWELL**

Treasurer, Washington University  
St. Louis



with the right to renew for a like period.

Many people are under the impression that they may quote freely from copyrighted material if they merely indicate the extent of the quotation and give due credit. Here, the legal doctrine of "fair use" must be one's guide. Some even assume that they may mimeograph generous excerpts from such work for distribution to students without the consent of the owner of the copyright, if they do not sell the material and if they indicate the source of the quotation. This not only is a violation of professional courtesy but also is probably a breach of the law of copyright.

The courts long have recognized what is known as the doctrine of "fair use." This doctrine was evolved in early litigation in which irate authors attempted to bring pressure upon those publishing unfavorable reviews of their books. These cases held that, in the public interest, a reviewer might include reasonable excerpts from the work under discussion without violation of the copyright statute. Textbooks, by their very nature, may be quoted freely for direct classroom instruction.<sup>1</sup>

In order to reduce litigation in this field, in 1935 the joint committee on materials for research of the American Council of Learned Societies and the Social Science Research Council met with representatives of the National Association of Book Publishers. Bureau and agreed upon a definition of

"fair use." Although without judicial authority, the agreement has been of persuasive weight in subsequent litigation. It reads as follows:

"A library, archives office, museum or similar institution owning books or periodical volumes in which copyright still subsists may make and deliver a single photographic reproduction or reduction of a part thereof to a scholar representing in writing that he desires such reproduction in lieu of loan of such publication or in place of manual transcription and solely for the purposes of research; provided

"1. That the person receiving it is given due notice in writing that he is not exempt from liability to the copyright proprietor for any infringement of copyright by misuse of the reproduction constituting an infringement under the copyright law;

"2. That such reproduction is made and furnished without profit to itself by the institution making it.

"The exemption from liability of the library, archives office or museum herein provided for shall extend to every officer, agent or employe of such institution in the making and delivery of such reproduction when acting within the scope of his authority of employment. This exemption for the institution itself carries with it a responsibility to see that library employes caution patrons against the misuse of copyright material reproduced photographically.

"Under the law of copyright, authors or their agents are assured of 'the exclusive right to print, reprint, publish, copy and vend the copyrighted work,' all or any part. This means that legally no individual or institu-

<sup>1</sup>Oxford Book Company v. College Entrance Book Company, 39 U.S.P.Q.7 (1938); Macmillan v. King, 223 F.862 (1914).

tion can reproduce by photography or photo-mechanical means, mimeograph or other methods of reproduction a page or any part of a book without the written permission of the owner of the copyright. Society, by law, grants this exclusive right for a term of years in the belief that such exclusive control of creative work is necessary to encourage authorship and scholarship.

"While the right of quotation without permission is not provided in law, the courts have recognized the right to a 'fair use' of book quotations, the length of a 'fair' quotation being dependent upon the type of work quoted from and the 'fairness' to the author's interest. Extensive quotation is obviously inimical to the author's interest.

"The statutes make no specific provision for a right of a research worker to make copies by hand or by type-script for his research notes, but a

student has always been free to 'copy' by hand; and mechanical reproductions from copyright material are presumably intended to take the place of hand transcriptions, and to be governed by the same principles governing hand transcription.

"In order to guard against any possible infringement of copyright, however, libraries, archives offices, and museums should require each applicant for photo-mechanical reproductions of material to assume full responsibility for such copying, and by his signature to a form printed for the purpose assure the institution that the duplicate being made for him is for his personal use only and is to relieve him of the task of transcription. The form should clearly indicate to the applicant that he is obligated under the law not to use the material thus copied from books for any further reproduction without the permission of the copyright owner.

"It would not be fair to the author or publisher to make possible the substitution of the photostats for the purchase of a copy of the book itself either for an individual library or for any permanent collection in a public or research library. Orders for photocopying which, by reason of their extensiveness or for any other reasons, violate this principle should not be accepted. In case of doubt as to whether the excerpt requested complies with this condition, the safe thing to do is to defer action until the owner of the copyright has approved the reproduction.

"Out-of-print books should likewise be reproduced only with permission, even if this reproduction is solely for the use of the institution making it and not for sale."<sup>2</sup>

<sup>2</sup>The Gentlemen's Agreement and the Problem of Copyright, *Journal of Documentary Reproduction*, II, No. 1 (March 1939), 31-33.

## CENTRAL AIR CONDITIONING *as worked out*

### *for the expansion program of Southern Methodist University*

THE TREND AMONG SEVERAL TEXAS universities is to air-condition classroom structures, administration buildings, libraries, places of assembly, departments devoted to research, and a number of other specialized spaces.

Southern Methodist University has installed air conditioning installations in the library building, the general administration building, and in a newly constructed engineering building. The new science building is completely air conditioned; the new structures comprising the Perkins theological quadrangle will include an air conditioned chapel, administration and classroom building, and an air conditioned library.

The first air conditioning on the campus was applied to the library building. At the time the building was constructed, the air units for the building were housed in the library, and the refrigeration machinery was

housed in the power plant; the two were interconnected by insulated piping contained in the campus tunnel system. This installation was in the nature of a guinea pig; it proved the soundness of remotely locating the refrigeration machinery with respect to the building to be served.

When the expansion program for the university was begun, careful consideration was given to methods that might be employed to air-condition contemplated structures and the various existing structures. In order to air-condition the buildings involved, it would be necessary to apply heating, cooling and ventilation, together with the proper controls to segregate those items or to combine them as the particular needs of the individual build-

ings dictate. Consequently, the problem was viewed in the light of the entire group of buildings.

The campus had been provided with a central heating system wherein steam was generated in a central power plant and distributed through a system of underground concrete tunnels, approximately 4 by 6 feet. The condensate returns from the various buildings were also run in these tunnels back to the power plant.

It was decided that the best arrangement was to locate the refrigeration equipment, including the compressors, water chillers, condensers, cooling towers and pumps, at the power plant and to distribute chilled water through this tunnel system to the various buildings with the returns being collected

**STANLEY PATTERSON**  
Superintendent of Buildings and Grounds  
Southern Methodist University

From a paper presented at the meeting of the Association of Physical Plant Administrators of Universities and Colleges, May 1949.

and run back to the power plant. This decision was reached after considering the following factors.

#### WHY WE CENTRALIZED

1. It was evident that refrigeration equipment located in a central source could be maintained with far fewer trained men than if equipment of the same capacity were subdivided and scattered among several buildings. A small staff could not possibly give adequate supervision to the operation of numerous installations and could not exercise the same preventive care and maintenance that could be accomplished by the same number of men in constant attendance at the power plant.

2. It was extremely unlikely that all the buildings served with refrigeration would ever attain a maximum loading condition simultaneously. These loads would be built up by the Btu. values imposed on the building resulting from solar conditions affected by orientation, outside to inside temperature differentials, the amounts of outside air introduced, and the various internal loads occasioned by lights and appliances. We therefore concluded that, whereas each individual plant might have to be designed large enough to take care of its maximum loading, a diversity factor could be applied to a central plant that would result in a saving in the cost of a per ton of refrigeration effect. Further saving would be possible through the purchase of larger machines that cost less per ton to buy and install than the smaller units.

3. Space requirements were considered. If individual plants were put in, there would have to be space in each building to accommodate all of the equipment needed. In many cases in the existing buildings that space was unavailable, and in the case of proposed buildings the space would cost more than similar space provided in a building constructed as a power house.

Innumerable factors bear on the cost of space in the various buildings, some of which are excavation, as it is customary to put mechanical equipment in holes in the ground; enlargement of floor areas to accommodate the various pieces of equipment; provision for individual cooling towers on the building, necessitating additional weight supporting structures, and allied items.

4. The loss in heat of the cooling medium in its coursing through the tunnels both to and from the buildings

was considered, and the Btu. loss was actually calculated for some of the runs. It was determined that this Btu. loss in terms of equivalent refrigeration would be extremely low, being in the nature of a one degree rise in temperature for a 3000 foot run in each direction.

5. The appearance of the campus as a whole was considered in the light of locating cooling towers or evaporative condensers at or on the buildings. This would provide an enclosing problem if it were decided to attempt to beautify the members or to disguise them from the public's view. The addition of cooling towers and other equipment around the power house would not detract from the appearance of the campus.

#### MACHINES ARE CENTRIFUGAL

When it had been decided to use the central plant for refrigeration, the method of generating the refrigeration effect and the medium of conveying it were given consideration. It was decided to use centrifugal refrigeration machines to generate the refrigeration effect and to distribute it throughout the campus, chilled water being employed. The first unit purchased was a 450 ton machine driven by a 500 h.p., 4000 volt, wound rotor motor, which provided adjustment of the capacity by variations in the motor speed. This unit has proved satisfactory, although the initial loading on it was much smaller than the design capacity of the unit. Our second unit will be the same size.

In the present compressor, together with its water chiller, water is cooled to about 36° F. This water is circulated at that temperature to the various buildings. Within the building itself a supplementary pump is installed to overcome the friction losses within the building. The inlet to the pump is fitted with a three-way valve, which enables the mixing of the 36° chilled water with the water returning from the various units in the building. The flow of the two waters into the pump is controlled by a thermostat in the discharge of the pump to maintain the temperature of water designed for that particular building.

The air units within the building are equipped with coils, making a completely closed system, and control of the air temperature off the air units is obtained both by throttling the supply of water to the coil and by the use of face and by-pass dampers on the coil,

depending upon the particular installation and the conditions to be met. The main circulating pumps for the chilled water are located in the power house; they are designed to overcome only the friction losses within the tunnel systems.

Balancing valves and other means have been employed at various points to equalize the loads so that in effect there is a central system with chilled water available to each building at zero pounds' pressure; the building pump then circulates against the head of the system, discharging again at zero pounds' into the return line. Of course, these zeros are not correct and the actual figure varies with the distance from the power plant; nevertheless, the total head on the building circulating pumps is only the head within the building.

The cooling towers for the refrigeration plant are located at the power plant with a concrete basin set partially into the ground and an induced draft type of redwood tower supported on piers in the concrete basin.

With the central plant system it is possible to vary the water temperature circulated within the means to suit outside conditions, if it is borne in mind that the building system is designed to circulate itself under the maximum conditions. It also will be possible in the future, if the university expands to a great degree, to continue using the same piping and to reduce the water temperature, leaving the compressor below its 36°F. level by adding to the water a solution that will make an antifreeze mixture in order to reduce pumping costs. At no time in the foreseeable future will this situation arise, but it is recognized that it can be accomplished if necessary.

Presently, the main headers are 12 inches, and branch lines taper in size as the load diminishes. Obviously, since the immediate and future loads did not coincide and no reasonable assumption could be made as to ultimate capacities, the various pipes were designed with a tendency toward oversizing. The additional cost occasioned by this was slight.

Two unusual features may be of interest: the type of air conditioning system designed for the science building, and the fact the university plans to sell utility services to a church located at the extreme southern tip of the campus.

Through combining its facilities in the central power plant, the university

procures utilities at a low rate. Inasmuch as the distribution system contained in the tunnels approached within about 300 feet of the church, it was decided to extend the tunnel systems and the contained utilities to the church and to sell it electricity, steam and refrigeration.

The church is getting a bargain because it can buy from the university much more cheaply than it can provide the same facilities. From the university's standpoint, it will be acquiring a load that will for the great part take place at times when the university load is low, that will therefore require no additional equipment, and that will require no additional operating personnel. This is simply an extension

of the central plant steam distribution systems, which are in effect in many cities, to include the sale of refrigeration.

#### SCIENCE BUILDING INSTALLATION

Within the science building, the exterior wall losses are overcome by the use of window units supplied with primary air through a conduit type of installation. This primary air is heated or cooled as required by the season by means of hot or cold water circulating through coils in each unit; these coils serve to heat or cool secondary air which is recirculated from the room and which is mixed in the unit with the high velocity primary air. The primary air, circulated through ducts

of the conduit type from a single dehumidifier, serves the entire building. The window units are built into the walls under all outside windows.

This high velocity conduit system is supplemented by 19 other air units ranging in size from a unit handling 600 c.f.m. to a unit handling 7640 c.f.m. The secondary units serve independently four lecture rooms, three interior zones, two exterior zones in the center of the building that could not be reached by the aforementioned conduit system, and eight laboratories.

The lecture rooms are completely internal, and each is handled independently so as to provide completely flexible conditions of demand imposed by lights and people. The units serving these rooms are of the conventional type; they utilize outside air and recirculated air with a provision for the admittance of 100 per cent outside air for those seasons of the year when neither heating nor cooling is required. The remainder of the 19 systems and the primary system handle outside air exclusively in order to provide for ventilation requirements and the various exhausts imposed by the interior rooms, fume hoods, laboratories and other special features found only in a building of this type.

Provisions have been made to provide auxiliary reliefs to discharge the surplus air when the various fume hoods and similar devices are not running. The supplementary systems, in addition to providing ventilation air, provide whatever additional heating or cooling is required in order to compensate for the interior loads.

The entire building is equipped with completely automatic controls so arranged that in the summer the window units handle the load up to the limits of their capacities after which the secondary units take over to provide additional cooling as required, and so that in the winter the window units will take care of the entire heating load and the supplementary air is tempered only to provide the necessary air supply for ventilation purposes. The control installation will regulate the control to the desired point in each space independent of every other space to maintain predetermined temperature.

This building is estimated to require a total of 350 tons, but it could utilize still more if all the heat consuming appliances were in use at a time when maximum outside temperatures are reached.

## New technics in RADIANT HEATING



THREE DIFFERENT CONSTRUCTION technics were used for the installation of radiant heating coils in the main building of San Angelo Junior College, San Angelo, Tex.

In the two-story structure, which contains 61 rooms, floor coils were used for the auditorium, stage and library. The library is semicircular at one end, which necessitated unusual bending and welding for the coils in that area. Since the library is above a basement, the wrought-iron coils were positioned on steel mesh paper over 12 inch bar joists, then covered by the concrete floor slab.

For the auditorium stage, the coils were installed between floor screeds and then topped by maple finish flooring. In the auditorium proper, the design consists of three large grids, each having separate supply and return

main. The coils were placed in conventional fashion, on a 5 inch gravel fill, and covered by the concrete slab.

The heating system, fabricated at the site, was designed for the use of 114° water at 15° outdoor temperature. Gas-fired boilers supply water for both the radiant system and the convectors that are used in small individual rooms. Three pumps force the water through coils in the separate zones.

Design heat losses were calculated as follows: library, 170,000 Btu. per hour; auditorium, including stage, 583,000 Btu. per hour. Together, these are slightly less than half the total heat losses for the entire building.

About 8 tons of black wrought-iron pipe were used for the radiant heating coils. Galvanized wrought-iron was used for the other water lines.

# PORTABLE BLEACHERS *can be safe*

MOST SCHOOLS, COLLEGES AND UNIVERSITIES throughout the nation use portable bleachers in connection with all kinds of events. Many of these institutions continue to seat vast crowds year after year without serious injury to spectators. However, hardly a week passes without bleacher accidents, some of them serious. The cause of these accidents is usually failure to observe certain common-sense rules that apply to any type of seating.

At the outset, portable bleachers must be soundly constructed and properly engineered. The materials must be of top quality whether wood or steel is used. Closely allied with quality and engineering is an effective accident prevention inspection program. This inspection program is a direct responsibility of the school administrator or his designated agent. The importance of this phase of the safety program cannot be minimized. The reader will note that nearly every one of the 12 suggestions listed at the close of the article is an integral part of the inspection program.

Most bleachers purchased through reliable firms do meet reasonable safety standards; nevertheless, school officials should be sure that any portable seating is safe before the purchase is made. The use of home-made portable bleachers or other temporary seating should be discouraged unless the bleachers are designed by a competent engineer. Seating large groups of people in bleachers made even from five to 10 rows in height is a highly technical business, as many stresses and strains develop in seating that carries a highly mobile human load.

There are many causes of accidents in the use of bleachers. One of the most serious accidents in recent years was caused by the failure of the steel locking devices attached to the ground stringers.

Another bleacher collapsed with a full load of people as a result of weather conditions. A constant and heavy rain had loosened the ground supporting the "A" frame and, as a result, the ground gave way and that section of the bleacher collapsed. Still

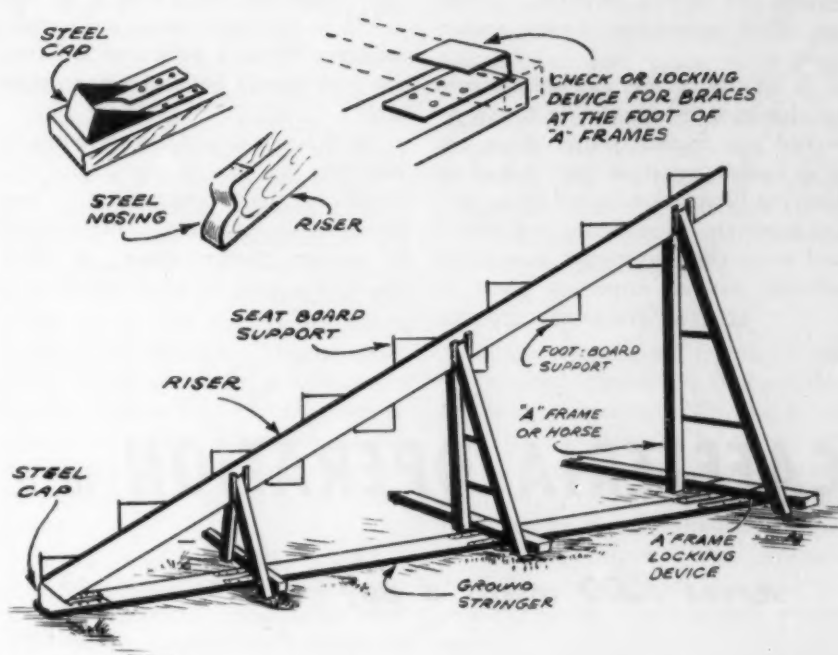


Diagram of a bleacher section showing good safety practices to follow.

## NORMAN E. BORGERSON

Assistant Superintendent, Michigan Department of Public Instruction  
Member, Board of Directors, National Safety Council

## ROLAND S. STROLLE

Consultant, School Organization and Plant  
Michigan Department of Public Instruction

another bleacher collapsed because the cross braces were omitted, and the entire section of seating shifted and fell to the gymnasium floor carrying a capacity crowd with it.

In virtually every instance, these accidents are caused by the failure to follow good safety practices in the erection and use of portable or knock-down bleachers. On the basis of years of experience with the seating of large crowds, we offer the following suggestions:

1. Bleachers should be erected on ground that is solid and level. The supports must rest on a firm, level

surface. If the ground is not level, it is far better to dig holes for the legs than to place blocking under them.

2. Be sure the ground stringers are sound. Inspect the steel caps and be certain that the toe is fastened firmly to the riser; also make sure that the cap is securely fastened to the ground stringer. The ground stringer must be constructed of some strong material.

3. The supporting horses, or "A" frames, should be securely bolted and well braced. They should fit the risers snugly.

4. The seat and footboard supports must be checked carefully, since often

these supports, which are made of strap iron, break or work loose. On some bleachers these supports are fastened only with a lag screw.

5. Seat boards should be of solid materials and be free from cracks and protruding bolts and slivers.

6. Foot boards must be especially strong and lapped properly. (These are often overlooked during inspections.)

7. All cross braces that are designed to eliminate sway must be firmly attached and fit snugly over the risers. It is found that these parts are often lost, but bleachers supplied by a good company are scientifically engineered and every part, no matter how insignificant, has an important place in

the total support of the portable bleachers.

8. Portable bleachers having more than 12 rows should have strong side and back rails. It must be remembered that while no one should swing or hang from these rails there is always a possibility that someone may.

9. Paint will often hide knots and cracks in the risers, horses and ground stringers. When a weak spot is found, the part should be replaced immediately.

10. Schools should always purchase bleachers that specify top quality materials in their construction. These bleachers are expensive. There should be proper storage space; all parts should be kept in good repair each

year and never should be allowed to remain out of doors over winter or during long periods when they are not in use.

11. Lending or leasing bleachers in most instances is unsatisfactory because there is usually some damage during transportation. If bleachers are lent, they should be carefully checked for lost or damaged parts upon their return, and suitable repairs and replacements should be made immediately.

12. Careful inspection of bleachers should be made before each event. Inspecting means getting under the seating to check the items stressed previously. This task should always be done carefully and thoroughly by a responsible employee.

## CAFETERIA OPERATION *at a small university*

*serves 1500 meals a day*

**LORENE RAY HAYNIE**

Director of Food Service  
Emory University, Emory University, Ga.

IN OPERATING A SMALL UNIVERSITY cafeteria, we find it a great help to have an approved budget. It is our yardstick and we continually check against it. Our cafeteria budget for the current year in percentage of sales is as follows:

	<i>Per Cent</i>
Raw food .....	50.00
Personnel .....	31.25
Supplies .....	3.11
Utilities .....	1.50
Membership dues, travel....	0.07
Laundry .....	1.41
Maintenance and repairs..	1.25
Depreciation .....	3.00
Equipment .....	1.75
Administrative expense....	1.80
Insurance .....	0.12
Amortization .....	4.74
Total .....	100.00

Inasmuch as food and personnel are the two items that represent the greatest expenditures, I should like to mention a few steps we take to operate within these percentages.

From a paper delivered at the first annual institute of the Southern Association of College and University Business Officers, November 1949.

*Purchasing.* Here food cost control begins. Need for the use of specifications and scales cannot be overemphasized. In our operation it has been necessary frequently to reexamine our purchasing practices from the point of view of labor costs. For example, we no longer find it economical to buy carcass meat. We ran test after test on the cutting of beef sides as against prefabricated items and always with the same results: better control of costs with precut meat.

Years ago we took a certain pride in showing beef aging in our coolers. We gave little thought to the loss in shrinkage and in the processing necessary to prepare it for cooking. George L. Wenzel, a leading food service consultant, recently recommended wholeheartedly the use of precut meats. We have not found it necessary to sacrifice quality. All of the larger packers have added facilities for offering meats cut to order. This brings us to another important factor in controlling food costs.

*Portion Control.* We raise our eyebrows when the cashier is short in his cash, but when the chef is short four

or five orders in a roast turkey or 10 or more hamburgers in a hundred pounds of meat, we say nothing. We find it wise to portion at least two of the three meats on the menu before they reach the steam table. Furthermore, it speeds the line somewhat. We recently purchased a food shaping machine that can be used for any firm mixture. With it we portion accurately croquettes and patties in one-sixth of the time required to do it by hand.

### PROPER EQUIPMENT CUTS COSTS

*Equipment.* We have grown accustomed to thinking of equipment in terms of labor costs, but food costs also are lowered with proper equipment. At Emory University we have installed in the cafeteria a conveyor primarily to save labor in returning the soiled dishes to the dishwashing department. We did not realize that it would be a means of saving food also.

At the beginning of a meal it is interesting as well as good business to stand alongside this conveyor and watch the parade of trays go by as they

are being returned by the students. When we notice an undue amount of any food being left on the trays, we check it at once. We often find that a portion is too heavy, or that it lacks seasoning, or for some other reason it is not up to standard. This being the case, we immediately take steps to correct it. Small items, such as timers and good thermostats, are invaluable in controlling shrinkage in cooking.

**Miscellaneous Factors.** Menu structure and pricing, storage and refrigeration, waste control and use of by-products, personnel training and record keeping, and many other items affect the food costs and, likewise, need to be controlled. Take menu structure: we limit the number of high cost items on the menu at the same meal. Best sellers or food that represents 10 per cent of the total income needs to be analyzed frequently. It is easy for a chef to get out of line in formulas giving a bit more chicken in the pie or an ounce more of something else here or there. Standardized recipe files tailored to your own needs are one of the best tools in controlling food costs.

#### PERSONNEL COSTS

The food service industry is especially vulnerable to employee attitudes, which have a great effect in production and pay roll costs. The disgruntled baker will reflect his discontent in the pies he bakes and so will the cook or the salad maker. Employee morale has been boosted through our system of weekly conferences, training classes, and visits to other food establishments. Each employee is given a cake on his birthday, a small gesture costing little. A one-page cafeteria bulletin creates a certain amount of interest and enthusiasm.

The food service industry over the nation has been one of the last to come to the 40 hour week. We had the feeling that it was impossible to cover the long hours necessary for the preparation and serving of three meals a day on a 40 hour per week basis and stay in business. It isn't nearly so difficult as it seemed. We first cut from 46 to 44 hours and after three months shortened the week to 40 hours (five eight-hour days with extra pay for Sunday work). Surprisingly, the pay roll increased little after the adjustment period was over. This, also, was an important step in improving employee attitudes.

At the meeting of the National Restaurant Association in Atlantic

City last May, the director of food service in a well known university told of how the student employees there became organized and came to him with their demands. Other attempts at unionization by students also were reported.

The food service industry is faced with unionization, and it is well to lay the groundwork now for the day when it comes.

#### IMPORTANT POINTS

I should like to mention a few things that seem important to me as manager of a university cafeteria.

1. Recognition of the need to work toward a wider appreciation of the importance of college food service, to enhance its reputation with the students, faculty and community. When college food service is no longer something to joke about, the morale of the student body will not be in jeopardy. When this respect is deserved our cafeterias and dining halls will no longer be referred to as "beaneries" or "hash-houses."

It may possibly be that we need to give more thought to the merchandising of our services. Someone has said: "Just as we make people better by making them think they are better, we make food taste better by making them think it tastes better."

2. More warmth and hospitality in our dining rooms. This is sometimes difficult to achieve in the very large dining areas commonly used in col-



leges and universities. The Emory Woman's Club is making a fine contribution in providing special floral arrangements weekly for the cafeteria. This service adds much to the atmosphere of the dining room.

3. A uniform classification for comparison of food dollars. It is difficult to obtain comparable percentages for this type of study because of variation in costs, records and differences in local conditions.

4. Recognition of the need for improvement in our relations with stu-

dents, faculty, employees and the general public. The cafeteria management is displayed to the public three times a day; we have a wonderful opportunity to enhance the prestige of the university. The big problem confronting us is not just to feed the students and college personnel but to have them happily fed. At Emory we have found that occasional dinner meetings or conferences with students who are campus leaders have done much to improve relations. When there is too much secrecy about management we become suspicious. At these meetings we try to answer any questions the students care to ask about the operation of the various departments under the university business manager.

#### RESPECT STUDENTS' WISHES

In the cafeteria we frequently ask for student opinion on changes that are being considered. We like to respect their wishes and we want them to know that we do. For instance, when we considered changing our milk service from individual cartons to bulk, we displayed the dispensers for a few days and, after a trial use, asked them to vote for their preference.

When we purchased new dining tables, we put two models on exhibit, one with a dark finish and one with a light finish. The students were asked to express their opinion as to color. We do not always follow their thinking but we find that by giving them an opportunity to express their feelings beforehand many complaints are eliminated later.

During the last year we provided food or refreshments for approximately 225 special occasions. In this service we have an opportunity further to improve relations. In order that everyone may know exactly what goes on behind the scenes in our kitchen, occasionally on Sundays we issue a special invitation to the public to come in and watch the food preparation. The supervisors of the public school cafeterias and the home economics departments of the near-by schools and colleges visit us at least once each term. We give them a refreshing drink and hope they go away with pleasant memories.

I cannot tell you how important it has been to me personally to have had the sympathetic understanding of the business manager and to have been trusted with sufficient information to do my job.

# MEAT CASSEROLES *to please the palate*

MEAT CASSEROLES CONTINUE TO rate high in popularity. Ease in preparation and serving, attractiveness in appearance, and the blending of delicious flavor combinations make these dishes favored by those who prepare them as well as those who eat them.

## EASE IN PREPARATION

A casserole is usually a meal in itself. The combination of meat and vegetables or fruits, or both, provides at least for the main part of a meal. It is easy to take advantage of every working moment inasmuch as the ingredients for most casseroles can be prepared in advance, when it is convenient. It must only be kept in mind that advance preparation may have a bad effect upon the nutritive value and keeping quality of some foods.

The foods are combined, some pre-cooked if desired, placed in the casseroles and cooked ready to go to the table with no problems of serving foods individually. Thus, there is less last minute rush. Fewer utensils are needed for preparation than is the case when these foods are served as separate dishes, and keeping a meal hot is limited to one dish instead of several.

Everyone is conscious of the value of making dishes look attractive. Color as well as flavor is important. No

## REBA STAGGS

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one would plan a stew of meat, onions, turnips and potatoes and expect it to be as popular as one which included variety in color and shape of vegetables. Carrots, green beans, peas, rutabagas, sweet potatoes, squash and many other vegetables add interesting flavor, color and shape.

Texture often is indicated by the appearance of a cooked vegetable; over-cooking or under-cooking decreases acceptability. Over-cooking causes vegetables to lose their identity and appetite appeal and under-cooking fails to develop the desired flavor and tenderness.

Although the foods for the casserole dish may be wisely chosen for color, flavor and texture and although they may be properly prepared, it is often the extra touch that popularizes a dish. When casseroles call for biscuits, vary the shapes. Make heart, square, rectangular, semicircular or doughnut shaped biscuits. Sprinkle parsley in center of doughnut biscuits or around or over other biscuits. Add chopped parsley or pimiento or grated cheese to the biscuit dough. Biscuit dough as a lattice top is also attractive. Sweet potatoes and white pota-

toes may be tubed around or in the center of casseroles. If time is limited, spooning these mashed vegetables over the casserole produces the same effect.

Choose beef, veal, fresh pork, smoked pork, lamb, sausages, variety meats, ready-to-serve meats, precooked or uncooked, sliced, cubed, julienne-style, chopped or ground. Combine any of these meats, or combinations thereof, with any of the many vegetables or fruits, whole, sliced or chopped, and the challenge to the imagination knows no bounds. Rice, noodles, spaghetti, macaroni and barley add interest to casseroles, and seasonings lend distinction to many dishes.

Economy meat cuts are usually chosen for casseroles. These cuts may be less tender but are full of flavor and are especially favored by long slow moist heat cooking in casseroles. Any of the meat cuts used for stews are suitable. Leftover meats are excellent for "hurry-up" casseroles, too. Sausage links or patties, frankfurters or other sausages and ready-to-serve meats often top escalloped vegetables en casserole—potatoes, corn, green beans, and cabbage being a few examples.

Some suggestions for meat casseroles are given on this page as well as on the following two pages.



## LAMB POTPIE—BISCUIT TOP

Number Servings: 50      Size Serving:  $\frac{3}{4}$  c.      Total Yield:  $2\frac{1}{4}$  gal.

Ingredients	Amount	Ingredients	Amount
Diced cooked lamb	1 gal.	Diced cooked potatoes	2 qt.
Salt and pepper	To season	Diced cooked carrots	2 qt.
Flour	1 c.	Stock or seasoned tomato juice	
Onions, chopped	4 lb.	Biscuit dough	
Lard or drippings	1 c.		

1. Season meat and dredge with flour.
2. Brown onions and meat in lard or drippings.
3. Add vegetables and liquid to barely cover. Heat.
4. Place in individual casseroles and top with biscuit dough,  $\frac{1}{2}$  inch thick, or with biscuits cut in any shape desired.
5. Bake at 425° F. about 20 minutes or until biscuits are browned.

LAMB POTPIE, TOMATO-CABBAGE SALAD

## HAM AND EGG PIE—TOPPED WITH BISCUIT

Number Servings: 50      Size Serving:  $\frac{3}{4}$  c.      Total Yield:  $2\frac{1}{2}$  gal.

Ingredients	Amount	Ingredients	Amount
Cooked ham, cubed	6 lb.	Milk	1 gal.
Chopped celery	2 c.	Salt	2 tbsp.
Chopped onion	2 c.	Hard-cooked eggs, cut in quarters	16 to 24
Margarine or ham drippings	$1\frac{1}{2}$ c.	Unbaked biscuits	50
Flour	3 c.		

1. Brown celery and onion in margarine or drippings. Blend in flour. Add milk gradually and stir until thick. Season.
2. Add quartered eggs and the cubed ham.
3. Place mixture in individual casseroles (allowing approximately  $\frac{3}{4}$  cup per serving), top with 2 medium biscuits and bake in a moderately hot oven (400° F.) 30 minutes or until biscuits are baked to a golden brown.

HAM AND EGG PIE WITH BISCUIT, TOMATO, WATERCRESS SALAD



## HAMBURGER CASSEROLE — DROP BISCUITS

Number Servings: 50      Size Serving: 1 cup mixture, 2 med. biscuits      Total Yield: approx. 3 gal.

Ingredients	Amount	Ingredients	Amount
Ground beef	12 lb.	Cooked or canned green beans	2 gal.
Onions, chopped	6 large or 10 medium	Drop Biscuit Batter	
Lard or drippings	3 c.	Sifted flour	3 pt.
Salt	$\frac{1}{4}$ c.	Baking powder	$\frac{1}{2}$ c.
Pepper	3 tsp.	Salt	4 tsp.
Condensed tomato soup	3 pt.	Lard	$1\frac{1}{2}$ to 2 c.
		Milk	4 to $4\frac{1}{2}$ c.

1. Brown meat and onions in lard or drippings.
2. Season. Add tomato soup and green beans.
3. Pour into greased individual casseroles allowing 1 cup meat mixture for each casserole.
4. Make biscuit batter as follows: Sift together flour, baking powder and salt. Cut in lard until mixture has fine, even crumb. Add enough milk to make a very soft dough.
5. Drop biscuit batter by tablespoons on top of meat mixture, allowing two biscuits per casserole.
6. Bake in a hot oven (450° F.) for 12 to 15 minutes or until biscuits are browned.

## BARBECUED LAMB HASH IN SKILLET

Number Servings: 50      Size Serving: approx.  $1\frac{1}{2}$  c.      Total Yield: approx. 4 gal.

Ingredients	Amount	Ingredients	Amount
Diced cooked lamb	6 qt.	Barbecue sauce	1 gal.
Grated onion	2 c.	Cooked potatoes	32 medium
Meat drippings	1 c.	Salt	2 tbsp.

1. Brown onion in excess fat from lamb.
2. Add lamb and brown lightly.
3. Add barbecue sauce and simmer 5 minutes.
4. Add potatoes and salt.
5. Heat to blend flavors.
6. Serve in individual skillets or casseroles.

## BEEF STEW IN CASSEROLE

Number Servings: 50      Size Serving: approx. 1 c.      Total Yield: 3 gal.

Ingredients	Amount	Ingredients	Amount
Boneless beef stew meat	12 lb.	Salt and pepper	To season
Flour	1 c.	Turnips, diced	25
Lard or drippings	1 c.	Canned peas	1 gal.
Liquid to cover	3 pt.	OR	
Medium sized carrots, cut in fourths	50	Frozen peas	6 lb.
Small white onions	50	Flour	For gravy.
		Biscuit dough	50 biscuits

1. Cut meat into 1 inch pieces, dredge with flour, and brown in fat.
2. Cover with liquid (water, meat stock).
3. Cover kettle and simmer (not boil) for about 1 hour.
4. Prepare vegetables.
5. Add carrots, onions, turnips and seasonings to meat and continue to simmer.
6. Cook frozen peas or heat canned peas separately.
7. Pour off liquid from stew and thicken for gravy.
8. Combine meat, vegetables and gravy. Pour into casseroles.
9. Top with biscuits and bake in a hot oven (425° F.) 10 to 12 minutes or until biscuits are browned.

## BEEF AND CORN CASSEROLE

Number Servings: 50      Size Serving: approx. 1 c.      Total Yield: approx. 3 gal.

Ingredients	Amount	Ingredients	Amount
Ground beef	12 lb.	Salt	6 tbsp.
Eggs	24	Cream-style corn	2 No. 10 cans
Milk	3 c.	Prepared mustard	$\frac{1}{2}$ c.
Soft bread crumbs	3 qt.	Finely chopped onion	1 pt.

1. Beat the eggs and stir in milk and crumbs.
2. Add remaining ingredients and mix thoroughly.
3. Grease individual casseroles. Turn mixture into casseroles and bake in a slow oven (300° F.) for 1 to  $1\frac{1}{2}$  hours.

## PORK, NOODLE AND CHEESE CASSEROLE

Number Servings: 50 to 60 Size Serving: approx. 1 c. Total Yield: 4 gal.

Ingredients	Amount	Ingredients	Amount
Ground pork	8 lb.	Noodles, spaghetti or rice	4 lb.
Grated onions	1 qt.	Water	4 gal.
Tomato soup	4 No. 5 cans	Salt	¼ c.
Salt and pepper	To season	Grated cheese	1 qt.

1. Combine ground pork and onion.
2. Cook slowly in frying pan, until brown. Stir constantly.
3. Add tomato soup and seasonings.
4. Cook noodles, spaghetti or rice in boiling salted water, until tender.
5. Combine all ingredients. Place in individual casseroles (allowing approximately 1 cup per serving) and top with 1 tablespoon grated cheese.
6. Bake in a slow oven (325° F.) 30 minutes.

## FRANKFURTER SPAGHETTI

Number Servings: 50 Size Serving: 1 ½ c. Total Yield: 4 ½ gal.

Ingredients	Amount	Ingredients	Amount
Frankfurters, sliced ½ inch thick	12 lb.	Cloves	1 tsp.
Diced onions	2 c.	Allspice	1 tbsp.
Lard or drippings	½ c.	Pepper	1 tsp.
Salt	2 ½ tbsp.	Tomato juice	3 qt.
		Cooked spaghetti	1 ½ gal.

1. Brown sliced frankfurters and onion in lard or drippings.
2. Add seasonings, tomato juice and cooked spaghetti.
3. Place mixture in individual casseroles (allowing approximately 1 ½ cups per serving).
4. Bake in a moderate oven (350° F.) about 20 minutes or until flavors are blended.



TAMALE MEAT PIE, GREEN BEAN, ONION AND CUCUMBER SALAD

## FRANKFURTER AND GREEN BEAN CASSEROLE

Number Servings: 50 Size Serving: 1 c. Total Yield: 2 gal.

Ingredients	Amount	Ingredients	Amount
Frankfurters, sliced ½ inch thick	8 lb.	Salt	3 tbsp.
Margarine or drippings	1 ½ c.	American cheese, grated	½ lb.
Flour	2 ½ c.	Worcestershire sauce	½ c.
*Milk	1 gal.	Green beans, fresh or canned	1 gal.

1. Brown the sliced frankfurters in fat. Remove frankfurters.
  2. Stir flour into drippings.
  3. Add milk and salt and bring to a hard boil, stirring constantly.
  4. Remove from heat. Add cheese, Worcestershire sauce and green beans.
  5. Add frankfurters and put into individual casseroles.
  6. Bake in a moderate oven (350° F.) for 40 minutes.
- \* If canned beans are used, the liquid from beans may be used with enough milk to make 1 gallon liquid.

## SAUSAGE AND MACARONI CASSEROLE

Number Servings: 50 Size Serving: 8 oz. Total Yield: approx. 3 gal.

Ingredients	Amount	Ingredients	Amount
Bulk sausage	8 lb.	Canned tomatoes	1 gal.
Chopped onion	2 qt.	Salt	2 ½ tbsp.
Cooked macaroni	1 gal.	American cheese, grated	1 lb.

1. Brown sausage and onion together in frying pan.
2. Drain off the fat and save.
3. Add macaroni, tomatoes, salt and half of the cheese.
4. Place in individual casseroles and sprinkle with remaining cheese.
5. Bake in a moderate oven (350° F.) 15 minutes, or until cheese is melted and casserole is heated through.

## TAMALE MEAT PIE

Number Servings: 50 to 60 Size Serving: approx. 1 c. Total Yield: 4 gal.

Ingredients	Amount	Ingredients	Amount
Cooked meat, chopped	8 lb. (4 qt.)	Drippings	1 ½ c.
Corn meal	2 qt.	Tomatoes	2 No. 10 cans
Water	2 gal.	Corn, drained	1 gal.
Salt	2 ½ tbsp.	Salt	¼ c.
Onions	8	Dash cayenne, if desired	
Green peppers	8	Chili powder, if desired	

1. Combine corn meal, water and salt in top of double boiler to make mush. Cook 45 minutes, stirring occasionally.
2. Chop onion and pepper and cook in drippings.
3. Add tomatoes, corn, meat, salt, cayenne and chili powder. Cook until thick.
4. Line greased individual casseroles with a thin layer of the mush, pour in meat mixture and cover with remaining mush.
5. Bake in a moderately hot oven (375° F.) until brown.

# FIRE EXTINGUISHERS

## their selection, maintenance and use

### Part II

LAST MONTH I DISCUSSED FOUR OF eight recognized types of fire extinguishers. In this article I shall discuss the other four types. The third and concluding installment in this series will appear in the March issue.

#### CARBON-DIOXIDE TYPE

Carbon dioxide ( $\text{CO}_2$ ) is the name of a compound that exists as a gas at ordinary atmospheric temperatures and pressures. In addition to being approximately one and one-half times heavier than air, carbon dioxide is chemically rather inert and will not support combustion. It can be stored in containers, as either a liquid or a gas, and quickly discharged therefrom, through suitable nozzles, by means of its own storage pressure as the expelling force.

The fire extinguishing action of carbon dioxide is due principally to its smothering action, *i.e.* exclusion and dilution of oxygen. In the process of discharging the gas from its container, a portion may freeze to carbon-dioxide snow at a temperature of  $-110^\circ\text{F}$ . Some cooling effect may result, but this is minor, compared to its smothering effect, when carbon dioxide is used in small quantities.

Carbon-dioxide extinguishers make use of these properties of the gas. The hand portable sizes consist basically of a metal storage cylinder, a valve release mechanism, and a means of effectively applying carbon dioxide on the fire. Since the gas pressure within the fully charged cylinder is relatively high (approximately 850 pounds per square inch at  $70^\circ\text{F}$ .), these vessels are designed for a service pressure of 1800 pounds per square inch or more under Interstate Commerce Commission regulations and are so marked. All cylinders must withstand a hydrostatic test pressure of  $5/3$  the service pressure when new and *must be retested at least every five years*.

Safety disks are provided in the valve head that are designed to rupture

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at pressures lower than the test pressures for protection in case the cylinders are involved in a fire. A tube extends from the valve to the bottom of the cylinder so that only liquid carbon dioxide reaches the discharge horn until about 80 per cent of the contents has been discharged (at normal temperature), after which gaseous carbon dioxide is discharged.

To operate this type of extinguisher, hold in an *upright* position, pull the safety pin and open the discharge valve while properly directing the horn.

The size of these extinguishers is stated in pounds of carbon-dioxide charge within the bottle. The hand portable sizes are available in capacities of 2 pounds,  $2\frac{1}{2}$  pounds,  $3\frac{3}{8}$  pounds, 4 pounds, 5 pounds,  $7\frac{1}{2}$  pounds, 10 pounds, 15 pounds, 20 pounds, and 25 pounds.

#### SUITABLE FOR LIQUID FIRES

These extinguishers are classified as suitable for flammable liquid fires (class B). Since the "snow" and gas are nonconductors of electricity, if the discharge horn is nonmetallic these extinguishers are approved for use on fires involving electrical equipment (class C). They are not effective on deep seated class A fires but may be of value for surface fires in small quantities of such materials where the smothering effect of the gas may be utilized. Complete extinguishment in such cases will likely require the use of water. These extinguishers are assigned a classification or rating, depending upon size.

Maintenance consists chiefly of keeping the extinguisher fully charged at all times and of ensuring that it has not been tampered with or subjected to mechanical injury. This can be accomplished by periodic inspection,

by recharging it promptly after use (even though the entire contents may not have been discharged), and by a detailed examination at least once a year, preferably semiannually.

Since recharging involves handling gas under high pressure, special equipment is necessary to do this work. Most often, these extinguishers are sent away to be recharged, either by the manufacturer or by a concern equipped and with experience to handle this work properly. However, when a sufficient number of carbon-dioxide extinguishers are involved at any one location, it may be economically practical to purchase recharging equipment. If this plan is followed, only carefully trained personnel should be assigned to this work. Cylinders are required to be hydrostatically tested at least every five years. If the extinguishers must be sent out for recharging, additional fully charged extinguishers should replace them.

The quantity of carbon-dioxide charge existing within the extinguisher at any time can most readily be determined by weighing, preferably on a scale of the beam type graduated to read directly in ounces. If the *net weight* of the carbon dioxide is less than 90 per cent of that marked on the extinguisher, it should be recharged.

Carbon-dioxide extinguishers also are available in wheeled units of 50, 75 and 100 pounds' capacity, equipped with a valved discharge horn connected to 15, 25 and 40 feet of hose, respectively. Units of this size that are equipped with metal discharge horns are not approved for use on electrical fires because of the shock hazard. Maintenance of these large sizes is similar to that of the small, hand portable types.

#### FOAM TYPE

The fire extinguishing agent expelled by this type of unit is a foam consisting of carbon-dioxide gas enclosed in a tough film, forming a closely knit blanket of bubbles that

will float on the surface of most burning flammable liquids. The effect is to smother the fire by excluding oxygen. The blanket of foam persists for some time and prevents re-ignition of the fire from outside sources. Of first importance to remember is that the blanket of foam must be complete to effect extinguishment. If a small patch of liquid surface is left uncovered and burning, the foam blanket will be progressively destroyed by the heat of the flame—until all of the liquid surface is again afire. Foam may be rather stiff and again it may be watery, depending upon the mix. A foam that will flow and spread fairly quickly over the burning liquid surface is desirable.

The foam is the product of a chemical reaction between sodium bicarbonate and aluminum sulfate. It consists of an inner container filled to the proper level with a water solution of aluminum sulfate, an outer shell filled to the proper level with a water solution of sodium bicarbonate, and a discharge hose and nozzle. The sodium bicarbonate solution also contains a foam stabilizing agent to toughen the film forming the bubbles.

#### HOW IT WORKS

A cap with a rubber gasket screws on to a threaded collar at the top of the shell. A lead stopple fits loosely in the top of the inner container. When the extinguisher is inverted, the stopple will drop, permitting the two solutions to mix and generate foam. The gas pressure within the extinguisher serves to expel the foam. The extinguisher must *remain inverted* during operation.

Foam extinguishers, of the hand portable size, are available in 1¼, 1½, 2½ and 5 gallons' capacity. The commonest size, 2½ gallons' capacity, will generate from 18 to 20 gallons of foam and will discharge it through a horizontal range of 30 to 40 feet over a period of 60 seconds, if properly charged. Materials for charging should be purchased directly from the manufacturer of the extinguisher.

Underwriters' Laboratories, Inc. has assigned an A-1 classification, as well as B-1 classification, for the 2½ gallon size, since it must be capable of extinguishing a standardized class A fire. The foam stream is a conductor of electricity; therefore, this type is *not* approved for use on class C fires.

These extinguishers are relatively ineffective on fires involving such liquids as alcohols, acetone and lacquer thin-

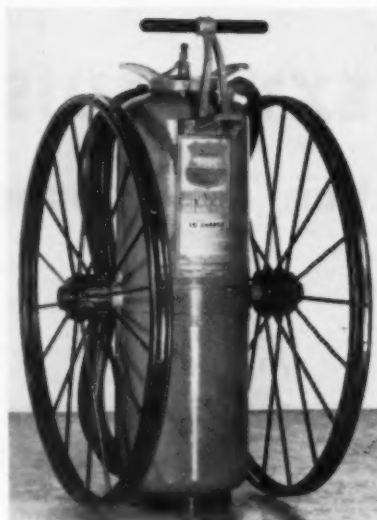


Fig. 1. Wheeled Foam Type. Maximum effective range of this type varies from 38 to 50 feet.

ners, such as butyl and amyl acetates, which break down the foam. Carbon disulfide and ethyl ether have low boiling points; when foam is applied to a fire in these liquids, the vapors may continue to penetrate the foam blanket and burn above it. Carbon disulfide and ether also break down foam considerably.

Maintenance of foam extinguishers is similar to requirements for soda and acid extinguishers. Periodic inspections and annual discharge and recharge are required. Under certain conditions the solutions in foam extinguishers deteriorate rapidly and it is important that they be freshly charged once each year. When located where continued temperatures lower than 40° F. may be encountered, extinguishers of this type must be placed in suitable heated cabinets. Freezing of the solutions will seriously weaken or burst the shell.

After the extinguishers have been operated, the inner container and stopple should be removed and carefully cleaned; the interior of the extinguisher should be thoroughly washed out. The discharge outlet screen should be carefully examined to make sure all the holes are free. The hose should be blown out or removed and water run through to clear any obstruction. The shell and inner container are filled with the proper solution to the level indicated.

Each chemical should be put into solution by mixing it with water in a separate, clean vessel and then strained into its respective container to prevent undissolved particles from entering and clogging the hose and nozzle

or screens at outlet elbow. Then the inner container is placed in position and the stopple is seated. Before screwing the cap into place, check the rubber gasket; if in poor or doubtful condition, replace it.

The shells of these extinguishers are required to withstand a hydrostatic test of 350 pounds' per square inch pressure for one minute without leakage or permanent distortion. This requirement is to prevent failure of the shell by internal pressure generated during operation. Therefore, both periodic inspection and thorough examination at time of recharging should include careful attention to weakness caused by mechanical injury, by freezing or corrosion. A doubtful extinguisher should not be returned to service.

Foam extinguishers also are available in wheeled units of 10, 17 and 33 gallons' capacity. Figure 1 is typical of these sizes. The 10 gallon unit discharges through 9 feet of ¾ inch hose; the 17 and 33 gallon units discharge through 25 and 50 feet, respectively, of 1¼ inch hose; all units have ⅝ inch shut-off nozzles. Maximum effective range varies from 38 to 50 feet. Time of operation may be from 2½ to 3½ minutes. Some designs differ in operation from the small units in that a manually operated stopple must be opened to allow the solutions to mix when the container is tipped. Maintenance of these large units is similar to that of the smaller extinguishers.

#### VAPORIZING LIQUID TYPE

The extinguishing medium used in this type of unit is a special, highly volatile, electrically nonconductive liquid having carbon tetrachloride as its base. The carbon tetrachloride used is commercially known as "fire extinguisher grade," from which corrosion producing impurities have been removed and to which have been added important components for depressing the freezing point to 50° F. below zero.

The extinguishing effect of this liquid is due primarily to the smothering action of the heavy blanket of vapor developed by the heat of the fire. One quart of liquid produces about 10 cubic feet of vapor. The liquid has little cooling effect because of its relatively low capacity for heat absorption upon vaporization.

Extinguishers of the vaporizing liquid type are available in three prin-

cial designs: the pump type, the stored air pressure type, and the stored carbon-dioxide pressure type. The first design mentioned utilizes a hand operated pump to expel the liquid. The pump discharges liquid on both strokes of the piston rod. These extinguishers are available in 1, 1¼, 1½ and 2 quart capacities, as well as in 1 and 2 gallon capacities. Effective range is approximately 20 to 30 feet.

#### BEST FOR ELECTRICAL FIRES

The stored air pressure type has a built-in, hand operated air pump by means of which air, under 100 pounds' per-square inch pressure, is compressed in a separate chamber within the unit and maintained until the extinguisher is used. Air pressure is indicated on a gauge attached to the unit. This design is available in 1, 2, 3 and 3½ gallon capacities. A half-gallon size in this general design has a valve connection through which air pressure can be built up by means of a tire pump or other air supply; the hand operated air pump built in to the unit is thereby eliminated. Effective range is approximately 20 to 30 feet. (See figure 2.)

The stored carbon-dioxide pressure type is available in two sizes, 1 and 2½ quart capacities, in which the gas is stored in the extinguisher shell above the liquid, the pressure being indicated by a small gauge. A 1 gallon size is available, utilizing a carbon-dioxide cartridge with an arrangement for puncturing a sealing disk to release the gas and discharge the liquid. Approximate range is from 18 to 25 feet.

Vaporizing liquid type extinguishers are best used for electrical fires, although they are of recognized value for use on small flammable liquid fires. Under fire conditions in which voltages of the order of 15,000 volts or fewer are involved, a practical margin of safety is provided against conductivity of the liquid stream by holding the extinguisher nozzle a distance of 12 inches or more from current carrying electrical parts.

In using extinguishers of this type, especially in unventilated spaces, such as small rooms, closets or confined spaces, operators and others should take precautions to avoid the effects that may be caused by breathing the vapors or gases liberated or produced. When carbon tetrachloride comes in contact with the heat of a fire it decomposes, at least partially, into carbon and chlorine; hydrogen chloride gas is usually

formed and traces of phosgene usually can be found. Whatever reactions take place, those in the vicinity of a fire upon which carbon tetrachloride has been discharged will likely be driven away by the irritating effect of the gases present.

One of the most important maintenance items to remember is *never* to use water for any purpose in extinguishers of this type. Water will introduce serious corrosion problems. Use the vaporizing liquid supplied by the extinguisher manufacturer. Use of commercial grade carbon tetrachloride is likely to produce serious corrosion within the extinguisher; also, this grade of liquid has not been treated to depress the freezing point. Obviously, it is important that the extinguishers be kept full of liquid (to the filling mark on stored pressure types) at all times and be refilled immediately after use. Periodic inspection should include examination to make sure that the extinguishers have not been tampered with or removed from their designated places; to detect any injuries; to see that they are full of liquid; to check the gas pressure in the stored pressure types, and to see that the orifice of the nozzle is not clogged.

At least once yearly the extinguishers should be examined as to the condition of the pump or pressure or weight of the cartridge. At these inspections, operation of the extinguisher should be tested by discharging some

of the liquid. In making this test, those types with hand pumps should be pointed both up and down to make sure that the internal pump takes suction from both ends of the tank. Pump parts should be carefully inspected, as far as possible, for any apparent corrosion. A leaking or inoperative extinguisher should be either discarded or returned to the manufacturer for repairs, depending upon its condition.

#### LOADED STREAM TYPE

The extinguishing agent in this type of unit is a water solution of an alkali-metal salt that has a freezing point of about 40° F. below zero; although the exact composition of the charge is a trade secret, it is known that potassium salts form a portion of the mixture. The effect of the "loaded stream" solution on fire differs from that of other extinguishing agents. On class A fires the stream extinguishes the flame rather suddenly, and there is a pronounced fire retarding effect. The effect on certain small class B fires has not been explained. There is no smothering vapor produced to blanket the fire, but apparently there is a chemical reaction tending to inhibit oxidation.\*

The loaded stream type of extinguisher is obtainable either with a carbon-dioxide cartridge for expelling the solution or in a design using a chemical reaction to produce gas expelling pressure. Sizes available are 1, 1¾ and 2½ gallons in hand portable types, and 17 and 33 gallons' capacity in wheeled types. The hand portable sizes are, in appearance, much like the soda and acid or the water filled extinguishers of the gas cartridge type. Underwriters' Laboratories, Inc. and the National Board of Fire Underwriters have approved loaded stream extinguishers as effective on class A fires, and only the 1¾ and 2½ gallon sizes on small class B fires. The Factory Mutual Laboratories does not recognize this type as suitable for use on class B fires. Since the discharge stream is a conductor of electricity, its use on class C fires is not recommended.

Maintenance of the loaded stream type of extinguisher is similar to that of comparable units of the soda and acid and gas cartridge type of water filled extinguishers. Only recharging materials supplied by the manufacturer should be used.

(To Be Concluded.)

\*N.F.P.A. Handbook of Fire Protection, 10th Edition.



Fig. 2. Vaporizing Liquid Type. Available in three principal designs, the extinguisher shown above is the stored air pressure type.

# NEWS

**V.A. Speeds Up Advisement Guidance . . . Six-Day Course in College Business Management . . . \$140,000 Rejected Because of Religious Bias . . . Merchants Sue Two Florida Universities . . . 25 per Cent Drop in Jobs for Graduates Predicted**

## **Change Will Speed Up Advisement Guidance to G.I.'s**

WASHINGTON, D.C.—Veterans Administration has adopted new procedures designed to speed up service to veterans changing G.I. bill courses to new fields of study. The new procedures allow a veteran's school—rather than the V.A. itself—to give advisement guidance under certain conditions. This method should eliminate any possible delays caused by V.A.'s increased load of guidance cases.

Under V.A. regulations, veterans who have completed or discontinued G.I. bill courses and who now want additional training in an entirely different general field should undergo advisement and guidance. Purpose of the guidance is to determine whether the veteran has aptitude for and needs the new course to attain his training objective.

Previously, under these regulations, veterans have been going to V.A. for advisement and guidance. But in some areas the number of veterans requiring guidance had grown to such an extent that backlogs were in the making. The newly adopted procedures, V.A. stated, should assure veterans planning to change courses of continuing good service.

The procedures work this way:

A veteran, in full-time training under the G.I. bill, who never before has changed his course but who now wants to change to an entirely different general field, may take his advisement and guidance at his school and not at the V.A. The school, however, should have an organized counseling service available to all students—veterans and nonveterans alike—offered at no extra cost either to veterans or to the government.

V.A. said it will accept the school's counseling service recommendations

"in the absence of substantial evidence to the contrary."

The school's counseling service may be used only for a veteran's first change of course, V.A. emphasized. If he has made changes in the past and now wants to change again, he may have to take advisement and guidance at a V.A. guidance center or office.

## **Summer Workshop Course in College Business Management**

OMAHA, NEB.—A summer workshop in college business management has been announced by Charles W. Hoff, vice president in charge of business management, University of Omaha. The course will be held for six days, July 31 through August 5, and will provide two hours' college credit at graduate level, if desired.

Registration is being limited to college business officers from institutions with enrollments of fewer than 2500 students. The workshop will be limited to 35 persons.

Dr. John Dale Russell, chief of the division of higher education, U.S. Office of Education, will present three lectures daily from 8 to 9 a.m., 11 a.m. to 12 noon, and 2 to 3 p.m. Others who will be serving as faculty members will be Boardman Bump, treasurer of Mount Holyoke College, who will be delivering daily lectures during the workshop period on various matters of budget control; Clarendon Smith, business manager of MacMurray College, Jacksonville, Ill., who will handle the section on noninstructional personnel, and Harold T. Porter, purchasing agent of Tulane University, who will direct activities for the section on purchasing.

The three sections are so scheduled as to permit the registrants to participate in all sessions during the week the workshop is in session.

## **V.A. Affirms Its Legal Right to Pay Nonresident Tuition**

WASHINGTON, D.C.—The Veterans Administration recently made public a decision involving millions of dollars and hundreds of institutions of higher education in which the administrator of veterans affairs, Carl R. Gray Jr., affirmed the legal right of the Veterans Administration to pay the so-called "nonresident" tuition rate for veterans studying under the G.I. bill even though such veterans are residents of the state in which they are going to school.

The decision was issued in two parts. The first part holds, in effect:

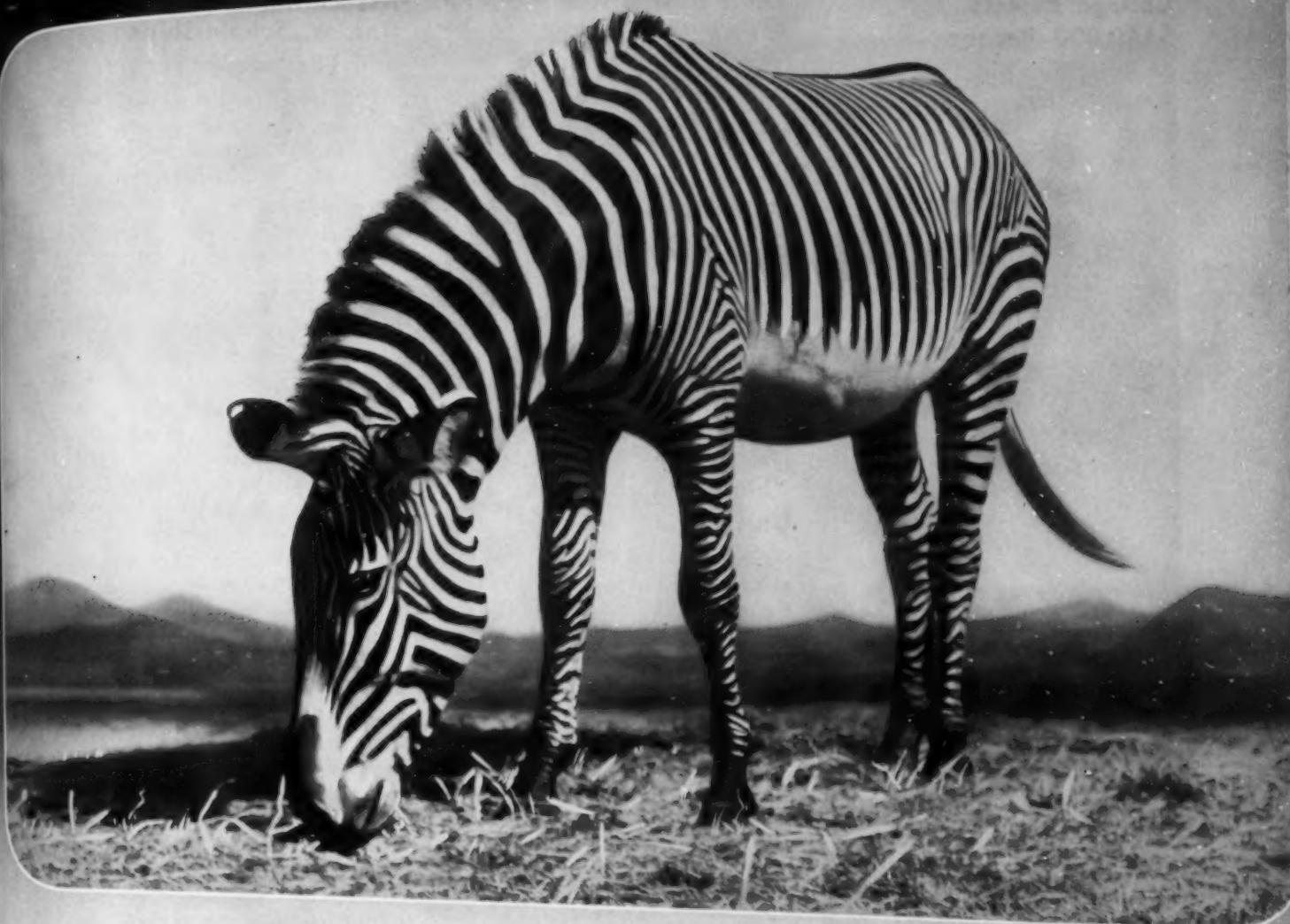
The fact that an institution has no tuition, or that it is prohibited by law from charging tuition, or restricted as to the amount it may charge for students enrolled in that institution does not preclude it from applying for a fair and reasonable rate of tuition under V.A. regulations, or from receiving payment of the tuition determined by the administrator to be fair and reasonable for the instruction of veterans.

The second part holds, in effect:

That such state laws as referred to in the first part have no bearing whatsoever on the authority of the administrator of veterans affairs to determine and pay such adjusted tuition and that the V.A. regulations promulgated by the administrator for this purpose do not require that such state laws shall be taken into consideration in contracting with the institutions for the instruction of veterans under those regulations.

The issue was raised by the government's general accounting office, which questioned the legality of V.A. payments at the nonresident tuition rate for veteran-students who are residents of the state.

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## NEWS

### College Rejects \$140,000 Because of Religious Bias

EASTON, PA.—The trustees of Lafayette College voted recently to reject a legacy of \$140,000 left the institution by one of its graduates, Frederick Theodore Frelinghuysen Dumont, a State Department career officer.

Because of a provision in the bequest that stipulated none of the funds could be used to provide scholarships for students of either Catholic or Jewish faith, the gift was turned down. The court action on the will, filed 10 years ago, had been delayed because of legal difficulties.

The provisions of the will were to become effective only in the event that the funds were used for scholarship aid. College authorities stated that none of the money left to the college from this will ever had been used. Dr. Ralph Cooper Hutchison, president of Lafayette, issued the following statement:

"With the court's initial allocation of funds from the Dumont estate, the trustees have had occasion for the first time to consider this generous bequest of approximately \$140,000.

"While the proceeds were to have been used for general endowment, the fact remains that the legacy contains an inoperative clause discriminating against Jews and Catholics. The board has therefore taken action declining the legacy as containing intimations of discrimination which are contrary to the history, practice and ideals of Lafayette College.

"Lafayette's enrollment has always included a large number of Jews and Catholics, and some of its most distinguished alumni are among them."

### To Reduce Number of Atomic Fellowships

WASHINGTON, D.C.—The Atomic Energy Commission will cut sharply the number of research fellowships for the next year, because of the A.E.C. opposition to loyalty investigation required of applicants in nonsecret fields.

Congress, in passing the appropriation bill last session, attached a rider that all applicants for A.E.C. fellowships must undergo a full loyalty check-up by the Federal Bureau of Investigation. The probe is made mandatory for applicants whose work will not

require access to secret data. (F.B.I. loyalty investigations have always been made on applicants for grants where work would involve secret information.)

Only 75 new fellowships will be awarded and about 175 renewed, the commission said. The fellowship program will thus be reduced to between \$600,000 and \$900,000, in contrast to the \$1,500,000 which was expended last year.

The A.E.C. will no longer offer predoctoral fellowships under the new arrangement. Postdoctoral grants will be available only in fields involving use of secret material.

### Merchants File Suit Claiming Two Florida Universities Unfair

GAINESVILLE, FLA.—Thirty-three merchants of Gainesville and Tallahassee recently filed suit against the University of Florida and Florida State University on the basis that university competition is unfair and represents a trend toward "socialization, collectivism or whatever it may be called."

The suit, as originally filed, asked the Leon County circuit court to set down some rules governing state competition with private enterprise. The merchants cited in their suit operations of the bookstores and luncheonettes, particularly at the University of Florida, which sell a wide range of items from sandwiches to costume jewelry. They claim that although the college sources purport to serve only students, the campus stores place no obstacle in the way of the general public trading there and that they are "so patronized in a limited manner."

Reaction to the suit was immediate. Students at both universities threatened to boycott all merchants who filed a complaint. Local storekeepers in Gainesville agreed to withdraw the suit and petitioned the court to release them as complainants.

### Flying Classroom

EAST LANSING, MICH.—Michigan State College's latest "flying classroom" project is a six-week trip by air to study school conditions in Europe. It is expected that 60 educators and school administrators will make the flight. They will leave New York on March 18 to visit 12 European countries.

### Association Discusses Quotas, Scholarships and Tax Exempt Income

CINCINNATI.—The American Association of Colleges devoted major attention to the problem of medical school quotas, federal scholarships for needy students, and the investing of funds in business enterprises at its annual meeting held in Cincinnati recently.

In discussing the place of the professional schools in today's economy, the American Conference of Academic Deans, which met simultaneously with the American Association of Colleges, unanimously adopted a resolution calling on the Association of Medical Colleges to admit more students. College presidents are reported to have complained that medical schools operating in conjunction with their institutions act in such an independent manner as the result of procedures of the Association of Medical Colleges and the American Medical Association as to make it difficult for the university to exercise much control.

On the subject of federal scholarships for needy college students, it was reported that a majority of the college authorities favored some form of a scholarship program. Those who objected to the program felt that the application of a federal scholarship program might be a step in the direction of control of colleges and universities by Washington bureaucracy. Dr. Guy E. Snively, executive director of the Association of American Colleges, was an outspoken critic of the currently sponsored legislation by U.S. Office of Education officials calling for an expenditure of \$300,000,000 in scholarship funds.

In regard to the matter of colleges engaging in businesses where educational institutions might enjoy a tax exempt status, a report from Harold E. Stassen, president of the University of Pennsylvania, developed into a heated debate by college authorities as to how far an educational institution should go in investing in organizations where, for all practicable purposes, the college becomes the operator of a business and is in direct competition with other organizations which are not privileged to enjoy tax exemption.

Dr. Carter Davidson, president of Union College in New York, reported on a recent American Council on Edu-

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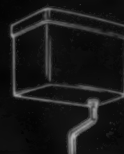
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cation study revealing that 445 colleges and universities in the country are getting income from sources other than their tuition or traditional sources. This represents a total investment of noneducational businesses by institutions of higher education in the amount of \$300,000,000 to \$400,000,000.

## President Recommends \$2,481,000,000 for Vets' Education and Training

WASHINGTON, D.C. — President Truman in his message to Congress recommended the appropriation of a total of \$3,030,935,000 toward education. Of this amount \$2,481,000,000 was allocated for veterans' education and training under the G.I. Bill of Rights.

President Truman stated that the education and training program is now considerably higher than had been expected and that the average number of participants in 1950 is estimated at 400,000 above the level anticipated a year ago.

Because of this unexpected increase, the President is expected to request Congress to provide a supplemental appropriation of about \$700,000,000 to cover the higher expenditures now estimated in the current fiscal year.

President Truman also recommended \$30,000,000 for aid to medical education to increase enrollments in schools of medicine, nursing, dentistry and public health. The President also pointed out that the budget includes \$1,000,000 as a tentative estimate of appropriations needed in the fiscal year 1951 to establish the required organization to initiate a federal scholarship program.

## Harvard Students Retain Discrimination Ban

CAMBRIDGE, MASS.—The Harvard student council recently refused to lift a ban on discrimination for "race, color or nationality" in all college organizations, according to a statement by Edward F. Burke of Providence, R.I., president of the council.

This refusal to take action on the problem was the result of an 8 to 8 tie vote on a motion to rescind the ban that followed a debate on the subject for four hours.

It was reported that a new motion to reconsider the vote would be offered

at this month's council meeting, but it was felt that there probably would be little change in the vote.

Mr. Burke pointed out that the strengthening of the resolution might mean that the Harvard chapter of Sigma Alpha Epsilon would be limited in the time it would have to accept the ban. Its national charter limits pledging to "members of the Caucasian race."

## M.I.T. to Offer Food Technology Short Course

CAMBRIDGE, MASS.—A three weeks' special course in food technology, from June 12 to June 30, a feature of the 1950 summer session at the Massachusetts Institute of Technology, has been announced by Prof. Walter H. Gale.

To be given under the direction of Dr. Bernard E. Proctor, professor of food technology at the institute, the intensive course will give particular emphasis to recent developments in food manufacture and control. In addition to lectures, demonstrations and conferences at M.I.T., there will be opportunities for group visits to representative food industries throughout greater Boston.

The course, intended principally for those having some knowledge of the basic sciences pertinent to food technology, should prove valuable to advanced students in other sciences as well as to executives and employees in food industries.

## Columbia Cuts Yearly Deficit by \$841,720

NEW YORK.—Columbia University's operating deficit was \$841,720 less during the fiscal year 1948-49 than the previous year, according to a recent annual report released by the institution. The saving resulted primarily from greater income from student fees, endowments and gifts.

Though operating costs mounted by more than \$1,000,000 in the year ending June 30, the budget showed a similar rise in income from tuition and fees. Gifts, government allowances related to contracts, and endowments netted the university an additional \$800,000 more than in 1948.

Thus the 1949 deficit before amortization of loans was \$175,797 as opposed to a deficit of \$1,017,517 in fiscal 1948. After debt amortization the deficit last year was \$393,418.

## Predict 25 per Cent Drop in Employment of June Graduates

CHICAGO.—According to a recent survey conducted by Frank S. Endicott, director of Northwestern University's bureau of placement, high school and college graduates this June may expect a 25 per cent drop in employment. This observation was based on the results of a survey among 169 large corporations throughout the United States and among college presidents, deans and faculty members from 23 states. Endicott reported that 132 industrial concerns, which hired 8321 college men and women in 1949, expect to take only 6270 graduates in 1950.

The industrial personnel directors, in commenting on the survey, stated that the fact is that "too many college graduates are looking for executive positions." These positions are now filled because of the completion of postwar expansion programs in most businesses. It is agreed among educators that in the future colleges must prepare graduates to expect more of the routine of nonglamorous jobs and to work hard for long-run promotion.

It was recommended that in order to absorb graduates now coming from educational institutions it would be helpful if industry would make long-range plans and advise colleges of anticipated needs. From the college point of view it might be more helpful for institutions to become more selective in admissions policies and insist on high standards of students' work.

## Advocates Expansion of Community Colleges

NEW YORK.—Dr. James Bryant Conant, president of Harvard University, urged in an address before a business convention in this city that the major expansion in higher education should come in the area of two-year community colleges.

According to Dr. Conant, community colleges should specialize in helping the high school graduate to become a more effective citizen, and the emphasis should be on "terminal programs." The institution should not be regarded as the first two years of a college or university, but students should be able to make transitions to a four-year college or university if

(Continued on Page 52)

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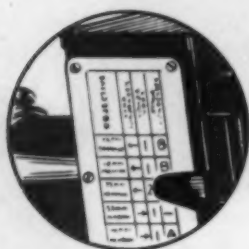
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## NEWS

they show aptitude or inclination. Dr. Conant believes that the cost of providing such educational expansion would be considerably less than to attempt to provide for additional students in four-year colleges.

### Michigan U. Sets Up Research Center in Japan

ANN ARBOR, MICH.—University of Michigan officials announced that the first permanent research center in

Japan, authorized by Gen. Douglas MacArthur, will be established this month at Okayama by the University of Michigan.

Dr. Robert B. Hall, director of the center and consultant to Gen. MacArthur, announced that the university has leased a large Japanese house and a 20 room residence hall to carry on its comprehensive study of Japan. The major problem will be the impact of industrial concerns on the area immediately surrounding Okayama.



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## NAMES IN THE NEWS

**Merrill M. Barlow**, business manager of Drake University, Des Moines, Iowa, has resigned to accept a position as business manager of the National Conference of Christians and Jews in New York City. The announcement of his resignation was made by **Henry G. Harmon**, president of Drake. The new appointment becomes effective some time this month.



M. M. Barlow

**James H. Corley**, comptroller at the University of California, Berkeley, for nine years, has been named vice president in charge of business affairs. The new title does not mean extensive change in his duties, however. At the same time this announcement was made by **Robert M. Underhill**, secretary and treasurer of the regents of the university, it was announced that **Olaf Lundberg**, university accounting chief since 1938, will become an administrative officer reporting directly to the board of regents.

**Daniel Marsh**, president of Boston University, was named to succeed **Dr. Henry Wriston** as president of the Association of American Colleges at its recent annual meeting held in Cincinnati.

**Charles W. Hoff**, chief business officer of the University of Omaha since 1939, has been promoted to vice president in charge of business management, according to an announcement by **Farar Newberry**, president of the board of regents. Mr. Hoff will continue to serve as finance secretary of the regents.

**Roland R. De Marco**, named dean of Finch Junior College, New York City, last year, has been appointed administrative head of the college to succeed the late **Jessica Garretson Cosgrave**, president.

**Calvin W. Miller**, director of admissions and assistant dean of Hobart College, Geneva, N.Y., has been appointed headmaster of Santa Barbara School, Carpinteria, Calif. The appointment will become effective July 1. He has been a member of the Hobart Col-



C. W. Miller



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## NEWS

lege staff since July 1946, following his separation from the U.S. Naval Reserve as a lieutenant commander.



J. G. Holmes

assistant to Harold Taylor, president of

**John G. Holmes**, formerly with the investment banking firms of Kidder Peabody and Company and the Frederick Hatch Company, has been appointed

Sarah Lawrence College, Bronxville, N.Y.

**E. D. Whittlesey**, formerly director of public relations at the University of Denver, is the new director of public relations at the University of Florida. His appointment became effective January 1.

**Milton S. Eisenhower**, president of Kansas State College at Manhattan, has been named president of Pennsylvania State College. He succeeds the late Dr. Ralph D. Hetzel.

**Henry Barton** has been named treasurer of St. John's College, Annapolis, Md. He succeeds **Capt. Walter D. Sharp**, U.S. Navy, retired, who had filled the position on an interim appointment since March 1949. Mr. Barton retired early in 1949 from an executive position with the Standard-Vacuum Oil Company, ending a business affiliation that has lasted 30 years. While serving the company in China, he made the acquaintance of **Richard D. Weigle**, now president of St. John's, who was at that time a teacher at Yale-in-China.



H. Barton

**Rev. John M. Pearson**, director of the pension fund of the New York Conference of the Methodist Church, was recently named president of Drew Seminary for Young Women, Carmel, N.Y. He succeeds the **Rev. Philip S. Watters**, who has accepted a pastorate in New York City.

**James A. Perkins**, vice president of Swarthmore College, Swarthmore, Pa., has been appointed an executive associate in the Carnegie Corporation of New York, according to a recent announcement by **Charles Dollard**, president. Dr. Perkins will take his new post at the end of the academic year.

**Robert P. Daniel**, president of Shaw University, Raleigh, N.C., has been appointed to succeed the late **Luther H. Foster** as president of Virginia State College, which is located at Petersburg.



R. P. Daniel

**William J. Sanders**, president of State Teachers College, Fitchburg, Mass., since 1945, has been elected superintendent of schools of Springfield, Mass., to succeed **Alden H. Blankenship**.

**Rev. Ralph L. Woodward**, assistant dean, Divinity School, Yale University, has been named president of Central College, Fayette, Mo. He will assume his new duties in June 1950.

**Dr. Edmund E. Day**, president of Cornell University from 1937 until last July when he became chancellor, retired on January 31.

**Dr. John E. Sawhill**, director of New York University's student health service, was named president-elect of the

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## NEWS

American College Health Association at the recent annual meeting. As president-elect, Dr. Sawhill will take office in 1951 and will follow Dr. Irvin W. Sander, director of student health service at Wayne University.

**Harold W. Hackett**, former associate treasurer of the American Board of Commissioners for Foreign Missions of the Congregational Christian Churches, has been named vice president of the Japan International Christian University near Tokyo. He will be responsible for the business administration and general affairs of the institution; the major operation of his duties will include handling the details of the building and development of the university's physical plant. Mr. Hackett has spent 20 years in Japan since he first went there in 1920.



H. W. Hackett

**Isaiah Bowman**, president emeritus of Johns Hopkins University, Baltimore, died recently at the age of 71 years. He was president of the university from 1935 to 1949.

**Robert Lee Moore**, president emeritus of Mars Hill College, Mars Hill, N.C., died recently at the age of 79.

**Rev. Edward McShane Waits**, 78, president emeritus of Texas Christian University, Fort Worth, died recently. He retired in 1941.

**Tyler Dennett**, president of Williams College, Williamstown, Mass., from 1934 to 1937, died recently at the age of 66 years.

**James Edward Allen**, president emeritus of Marshall College, Huntington, W.Va., died recently as a result of a heart attack. He was 73 years old and had served as president from 1935 to 1942.

**Rev. Joel Babcock Hayden**, retired headmaster of Western Reserve Academy, Hudson, Ohio, died recently at the age of 61. He retired in 1945.

## DIRECTORY OF ASSOCIATIONS

### Association of College and University Business Officers

#### Central Association

President: Fred W. Ambrose, State University of Iowa; secretary-treasurer: L. R. Lunden, University of Minnesota.

Convention: April 30-May 2, University of Illinois, Urbana-Champaign.

#### Eastern Association

President: H. R. Patton, Controller, Carnegie Institute of Technology; secretary-treasurer: Irwin K. French, Middlebury College, Middlebury, Vt.

Convention: December 3-5, Royal York Hotel, Toronto, Canada.

#### Southern Association

President: C. B. Markham, Duke University; secretary-treasurer: Gerald D. Henderson, Vanderbilt University.

#### Western Association

President: Alf E. Brandin, Stanford University; secretary-treasurer: James R. Miller, University of California.

Convention: May 7-9, 1950, Claremont Hotel, Berkeley, Calif.

#### Schools for Negroes

President: A. I. Terrell, Winston-Salem Teachers College; secretary: L. H. Foster Jr., Tuskegee Institute.

Convention: May 4-6, Nashville, Tenn. Host institutions: Fisk University and Tennessee State College.

#### Association of College Unions

President: Donovan D. Lancaster, Bowdoin College; secretary-treasurer: Edgar A. Whit-

ing, Cornell University; editor of publication: Porter Butts, University of Wisconsin. Convention: April 26-29, 1950, New Ocean House, Swampscott, Mass.

### Association of Physical Plant Administrators of Universities and Colleges

President: L. L. Browne, University of Arkansas; secretary-treasurer: A. F. Gallistel, University of Wisconsin.

Convention: May 15-17, Yale University, West Point on May 18.

### American College Public Relations Association

President: E. Ross Bartley, Indiana University; secretary-treasurer: Edward P. VonderHear, Xavier University, Cincinnati.

Convention: June 27-30, 1950, University of Michigan, Ann Arbor.

### College and University Personnel Association

President: George W. Armstrong, University of Pennsylvania; secretary-treasurer: Ruth Harris, University of Illinois.

### National Association of College Stores

President: Herbert Hays, Berea College; executive secretary: Russell Reynolds, Box 58, 33 West College Street, Oberlin, Ohio. Convention: April 20-22, 1950, Palmer House, Chicago.

### National Association of Educational Buyers

President: Holger B. Bentson, George Williams College; secretary-treasurer: Bert C. Ahrens, 45 Astor Place, New York, N.Y. Convention: May 3-6, 1950, Houston, Tex.



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H-20TA—with tablet arm

H-20 $\frac{1}{2}$ —without arms

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THIS chair was designed *specifically* for library use in collaboration with the Lamont Library architects. Note the narrow back slat which just fits a normal grip, making the chair easy to lift and move about . . . the leg construction which tends to prevent the sitter from tipping the chair back . . . the distinctive yet unobtrusive styling that blends well with any library interior.

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Each serving weighs one ounce—the amount approved by the government for proper nutrition.



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Goodbye, costly paint bills! Goodbye, high priced labor! With FABRON on your walls you can confine your redecorating program to a conventional washdown with your customary neutral wall cleaner. FABRON's modern, sunfast lacquer surface remains fresh and attractive despite repeated washing. (Even stubborn ink and lipstick stains can be removed safely.) Its colors will not chip, crack or peel . . . and any damage to the material can be invisibly repaired by the simple inlay method. If your walls are weakened or already patched, FABRON's sturdy canvas and plastic base will strengthen the plaster and prevent cracks. No wonder FABRON — and *only* FABRON — can say, "Your wall cleaner can be your redecorator!"

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Another famous Hillyard "Standby" for schools. You already know much about this remarkable long-wearing, self-polishing wax . . . that is approved by flooring manufacturers and Underwriters' Laboratories . . . but we want to tell you about its latest accomplishments.



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NO SCRAPING OR SANDING  
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See how a drop of water is absorbed INSTANTLY by a Mosinee pure sulphate towel (the top one), while the ordinary paper towel (the lower one) "supports" a similar drop, failing to absorb it.

No words can tell this story to buyers of school towels as effectively as the test pictured above. For when you purchase towels, you purchase the ability of a towel to dry hands quickly — and completely. MOSINEE TOWELS, used through MOSINEE CABINETS, equal the utmost in washroom economy because they are made to meet rigid absorbency specifications.

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# Sanymetal "PORCENA"

\*Trade Mark Reg. U. S. Pat. Off.

(Porcelain on Steel)

## TOILET COMPARTMENTS

### Why the Bare Functional Type of Toilet Room Is No Longer Suitable

The ascendancy of good taste combined with new concepts of sanitation and convenience in toilet room environments makes the bare functional type of toilet room inadequate according to today's standards.

Toilet compartments usually dominate a toilet room, influence the toilet room environment and help to fulfill modern concepts of sanitation and convenience.

Sanymetal "PORCENA" Toilet Compartments are fabricated of ageless and fadeless material, porcelain on steel, which is a glass-hard, stainless material that always looks new, does not absorb odors, is moisture- and rust-proof, and resists the corroding of ordinary acids. The glistening "PORCENA" finish, which can be wiped clean as easily as a porcelain table top, requires no painting or refinishing.

Sanymetal "PORCENA" Toilet Compartments combine the results of over 35 years of specialized skill and experience in making over 100,000 toilet room installations. Ask the Sanymetal Representative in your vicinity (see "Partitions" in your phone book for local representative) for further information about planning suitable toilet room environments. Refer to Sanymetal Catalog <sup>21b</sup>/<sub>6</sub> in Sweet's Architectural File for 1949.

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Sanymetal "PORCENA" ACADEMY Type Toilet Compartments are suitable for conservative but modern toilet room environments.

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Write for Sanymetal Catalog 86 which illustrates modern toilet room environments suitable for all types of buildings. Several attractive designs in a wide range of colors available. This catalog is also contained in Sweet's <sup>21b</sup>/<sub>6</sub> Architectural File for 1949.

# Sanymetal

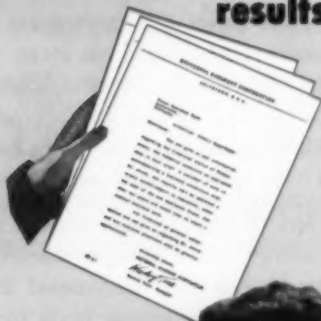
## TOILET COMPARTMENTS, SHOWER STALLS AND DRESSING ROOMS

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**University Pedestal Chair No. 472** Cradle-formed seat is large university size, assuring complete comfort for adults. Solid, deep-curved back fits the human body easily. Designed especially for use on riser-treads, to prevent use of back or seat as a footrest by those behind. Chair back is reinforced by full-length steel braces. Tablet-arm has two-directional steel V-brackets under arm and under seat. Rigid metal pedestal. Metal parts have dipped, baked-enamel beige finish. Wood parts beautifully and durably lacquered in natural wood finish. Furnished with or without book-rack. (Also available with open back and self-adjusting lower back rail, for use on level floors, in Universal Chair No. 471.)

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Exceptional value in low-priced, tablet-arm chair for small lecture rooms, with roomy, sanitary book compartment. Tablet-arm 23½ x 12 inches slopes 3½ inches within its length for writing comfort. Rigid, formed-steel arm support is securely attached to frame. Made in 17-inch seat height, only.



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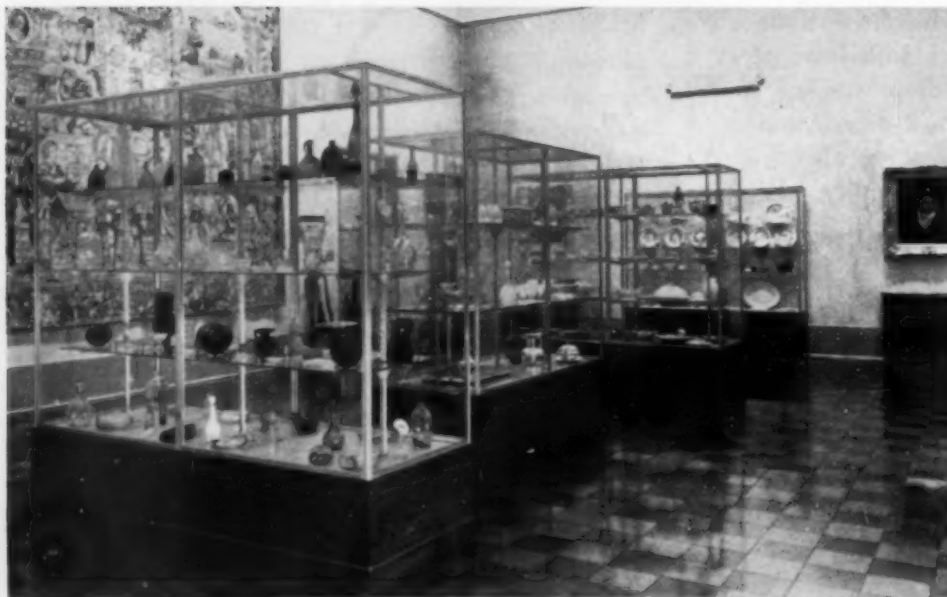
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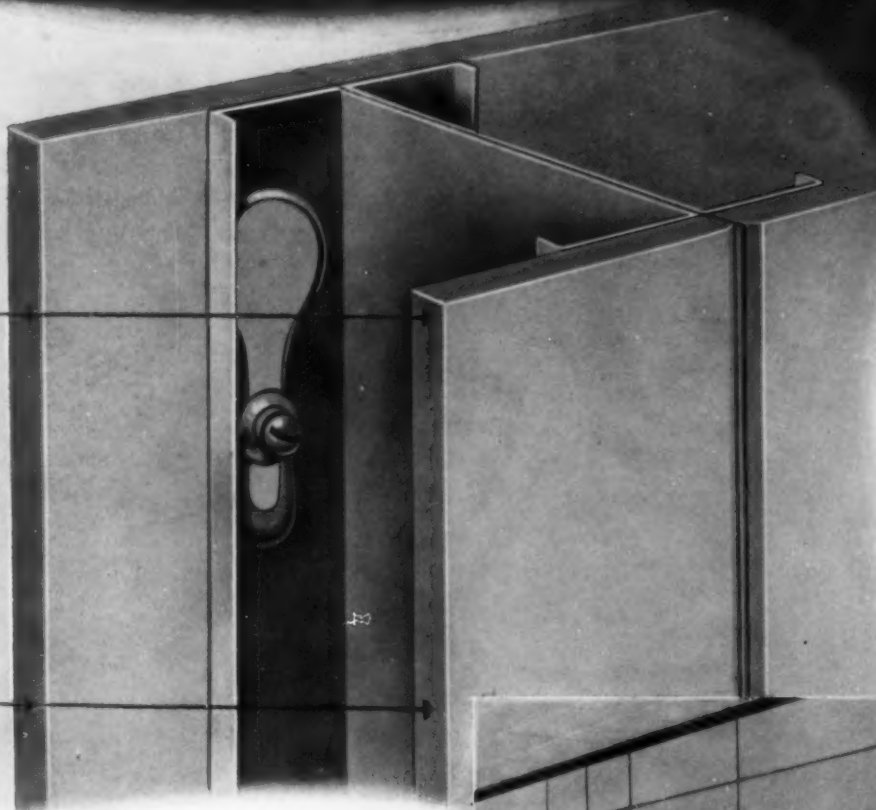
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## A NEW DEVELOPMENT IN MOVABLE WALLS

**Asbestos Panels  
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Cutaway of typical J-M Movable Wall construction. The 7/16"-thick asbestos panels, on patented steel studding, are available in a light green and light tan. NOTE HOW THE COLOR GOES ALL THE WAY THROUGH EACH PANEL!



### **No more painting. No more redecorating maintenance.**

In the world's largest laboratory devoted to the improvement of building materials, Johns-Manville scientists have perfected a process for introducing inorganic pigments as an integral part of the asbestos panels used in J-M Movable Walls.

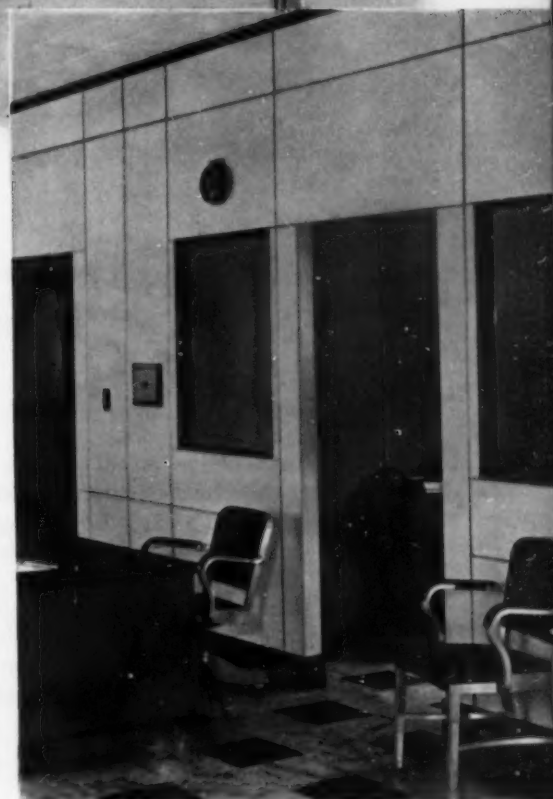
As a result, these beautifully-textured, fireproof panels now come pre-colored.

What's more, you'll have the advantage of "integral coloring," with the color going *all the way through*

*each panel*, so that it will never wear off. Your walls will have that "first-day newness" *every day* for years and years to come!

By eliminating painting and decorating expense, these new Transitone® Movable Walls will help you to meet your wall and partition requirements *economically*.

Transitone panels are hung on steel studs, forming a 4" double-faced partition. Also used as interior finish for the outside walls. Lighter than ever, they are readily installed or re-located. For details or an estimate, write Johns-Manville, Box 290, New York 16, New York. \*Reg. U. S. Pat. Off.



**Johns-Manville**



# Transitone

**MOVABLE WALLS** with asbestos panels colored all the way through



*Our teachers'  
complaint is noise!*

*That's one complaint  
**FIBRETONE**\* will quiet!*



◀ SEND for the brochure that tells you about noise-quieting  
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● Thousands and thousands of "noise traps" in classrooms, corridors, noise centers!—that's the secret of Fibretone Ceilings. The noise traps are scientifically designed cylindrical holes drilled in the Fibretone sound-absorbing panels. In a classroom 23' x 35', for instance, you'd have 389,620 of these ingenious "noise traps," constantly functioning to trap and dissipate irritating, unnecessary noise—noise that reduces personal efficiency of students and teachers. Send for the new Fibretone brochure. Johns-Manville, Box 290, New York 16, N.Y.

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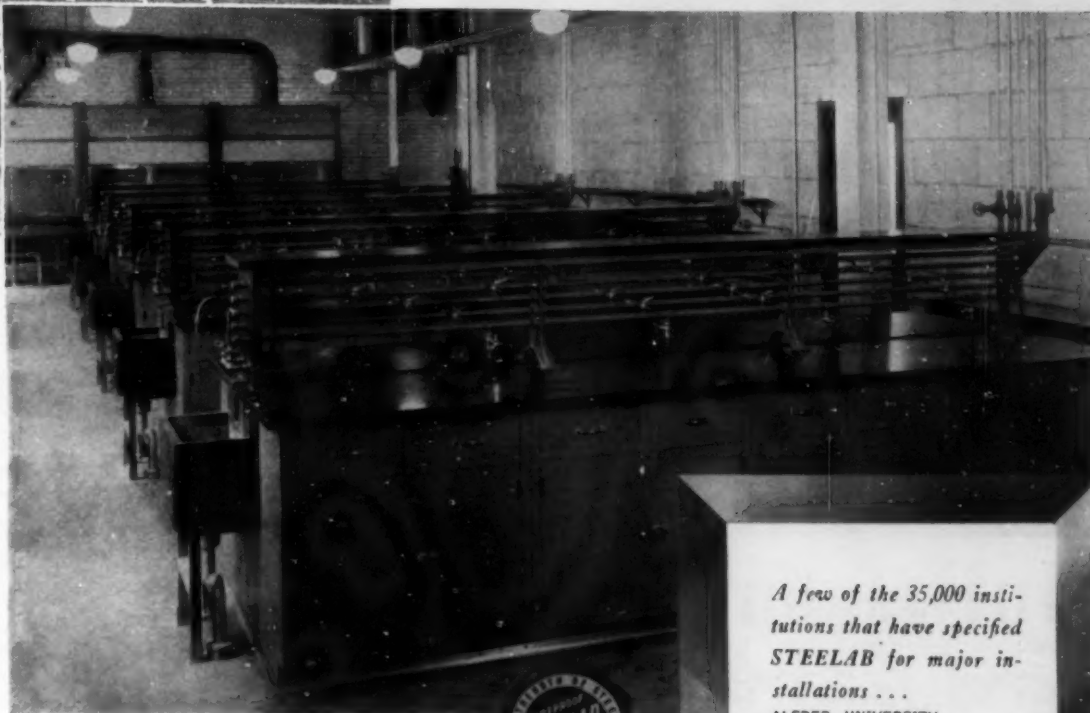
**Johns-Manville**

Transite® Movable Walls—Terraflex and Asphalt Tile Floors—Corrugated Transite®—Flexstone® Built-Up Roofs—Etc.

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**"STEELAB"**

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Lifetime durability, low maintenance cost and functional flexibility have made STEELAB furniture first choice in laboratory equipment in thousands of institutions for more than 20 yrs. Continued choice by these users is the true measure of STEELAB economy and permanence.

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*Creators and Manufacturers of STEELAB furniture*  
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Additional Revenue for Your  
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## Univendor Candy Vendors



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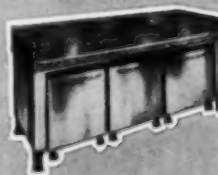
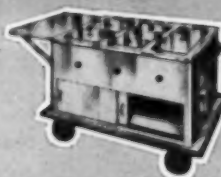
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Have the convenience and safety of permanent built-in seats... yet provide the maximum floor area for other purposes when spectator seats are not required. Medart telescopic gym seats occupy just 32 inches of floor space when in "nested" position! No special wall reinforcement necessary because load is distributed on the floor rather than wall.

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Medart Telescopic Gym Seats Available In WALL ATTACHED... MOVABLE... HIGH ROW (UP TO 20 ROWS HIGH) AND RECESSED TYPES

Write for descriptive literature... send your plans for suggestions.

SWEET'S FILE (ARCHITECTURAL) NO. 23g-3a and 23c-8a

FM50-1

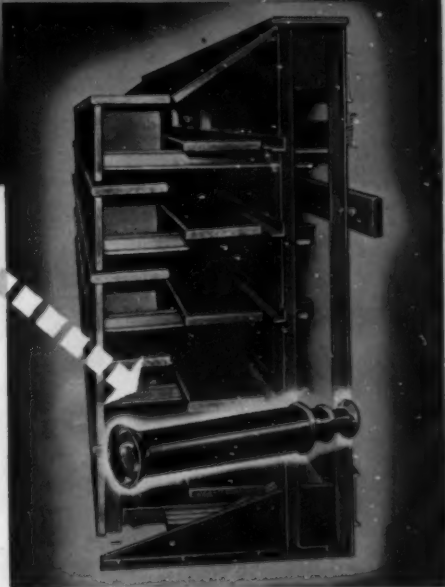


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WITH LINK SPRING

Sturdily constructed 3 piece bed. A moderately priced bed for dormitories, nurses' and interne's rooms. Can be used as a day bed by throwing the ends of the cover over the head and foot boards.

Posts: 1 1/4" square tubing. Panel: 7 1/2" formed. Height ends: 22". Spring elevation: 14". Width: 36". Casters: 2" rubber composition. 36" Wide. With No. 118 Foster Link Spring

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**\$22.75**

**\$22.25 Each in Lots of 6**

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Any Wood Grain Finish

Add \$2.00 per Unit

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SLEEP  
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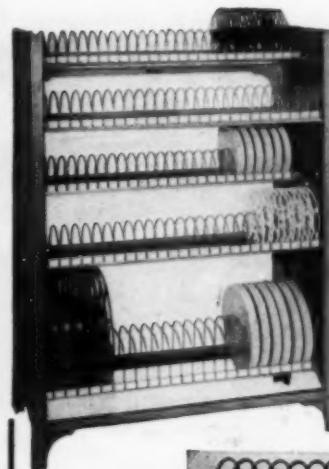
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RX-125

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Film Racks for  
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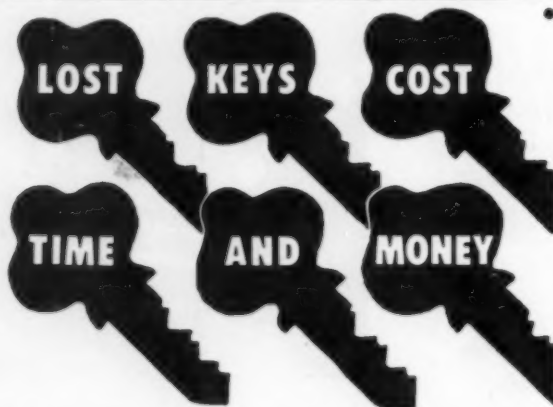
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You owe it to yourself to investigate this modern system of key control. It saves money year in and year out by eliminating expensive repairs and replacement of locks and keys. What's more, it guarantees security, convenience and privacy. No wonder Moore Key Control is used throughout schools, institutions, hospitals, industry, government, transportation, communications, housing . . . wherever keys are used. Send for details today!

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See your IDEAL dealer for information on models to suit your needs. Or write for catalogs.

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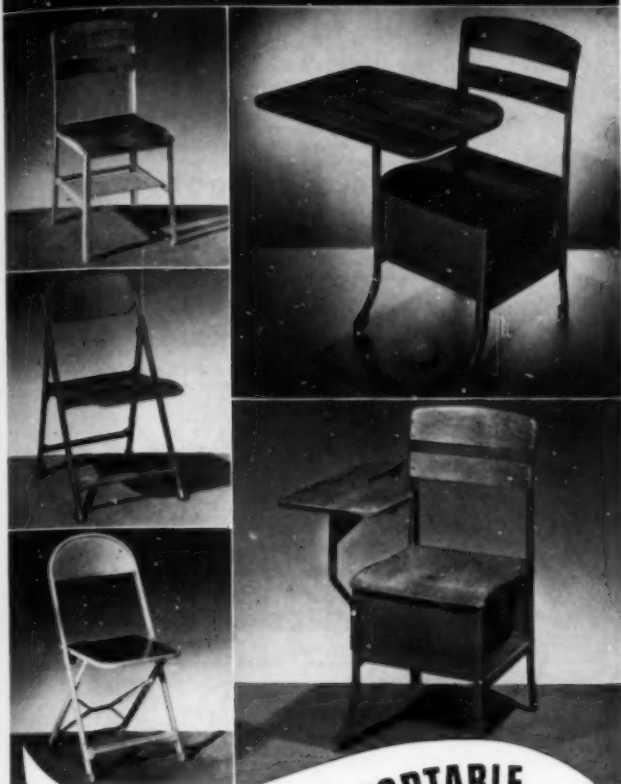
Dept. CB-50, Springfield, Mass.

# School DESKS...

## TABLET ARM CHAIRS

## ALL-PURPOSE CHAIRS

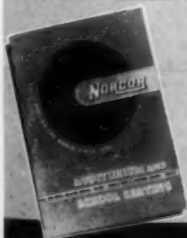
## AND FOLDING CHAIRS...



WHATEVER YOUR PORTABLE  
SEATING NEEDS...CHOOSE

### NORCOR

MORE versatile and more complete — you find more ways to solve your seating problems with the Norcor line. Illustrated, are a few units which are available in several types and sizes to meet your specific requirements. Strong, angle-steel welded frame construction, combined with extra thick-ply hardwood veneer wood parts, safeguards them against the hard knocks and abuse they are sure to receive. Chairs are correctly postured for more comfort and less slouch fatigue. The Norcor line also includes steel and wood folding chairs and auxiliary tables — One such chair unit includes a detachable tablet arm! Let us help you with your seating requirements now.



Write for catalog of  
complete seating line.



## The NORCOR Line

SCHOOL FURNITURE • FOLDING CHAIRS • TABLES • CARD TABLE SETS

NORCOR MANUFACTURING CO., INC. • GREEN BAY, WISCONSIN

## modern design

## Plus... cast iron

## construction



### TABLE BASES



Installation of C.H.F. #929-762 green  
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## Michigan State College

### STUDENT UNION BUILDING

Specifying the school color (green) for the table bases added a distinctive and colorful note to this Award-Winning installation. But equally important to the long life of the equipment, it is constructed of cast iron!

Cast iron resists corrosive action of water and cleaning compounds and the added weight guarantees a more stable table. Cast iron provides a solid foundation for a smooth finish that resists mars and scratches indefinitely. It's important to specify Chicago Hardware Foundry cast iron construction when you buy tables or stools.

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3120 Commonwealth Ave.

North Chicago, Illinois

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MODEL  
769

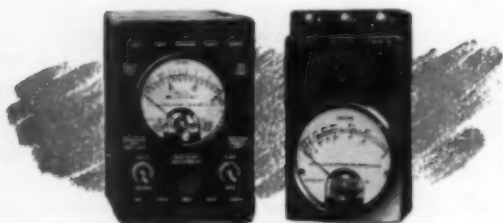


## Provides:

1. A stable, probe type, Vacuum Tube Voltmeter.
2. A high impedance electronic Volt-Ohmmeter using 115 volt, 60 cycle power.
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Ideal for practically all electronic measurements up to 300 megacycles. Especially designed for AM, FM, and Television requirements. Completely independent of line voltage variations between 105 and 130 volts. Full details in bulletin R-31-B.

## COMPACT TEST EQUIPMENT FOR CLASSROOM USE



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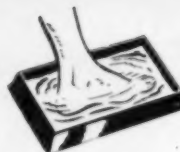
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# WESTON

*Instruments*

Write for Bulletin No. E5A describing the full line of WESTON Test Equipment . . . Weston Electrical Instrument Corp., 704 Frelinghuysen Avenue, Newark 5, N. J.

# Fight ATHLETE'S 3 FOOT THESE 3 WAYS . . .



## Here's the Sound, Tested Program for ATHLETE'S FOOT CONTROL:

### 1. ALTA-CO POWDER

. . . for the all-important foot tub in your shower rooms. One pound to a gallon of water kills common Athlete's Foot fungi in less than a minute! Non-irritating; harmless to towels. Easily tested for proper strength with Dolge Alta-Co Powder Tester.



### 2. ALTA-CO FOOT POWDER

. . . for dusting, gives additional protection against re-infection. Soothes while drying between toes in shoes and socks, this potent but gentle fungicide does its work where Athlete's Foot fungi flourish.



### 3. ALTA-CO 300 H. D. FUNGICIDE

. . . for your daily, systematic washing of shower room floors. In economical solution (1 to 300), its action is both fungicidal and bactericidal, giving your floors the same hygienic sanitation you demand be taken by each user of your facilities.

Write for 36-page illustrated booklet, "Athlete's Foot—A Public Health Problem."

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WESTPORT, CONNECTICUT



## STUMPED BY A LOCKER PROBLEM?

*Ask Dudley*

The Dudley Lock representative near you is an expert at solving school locker problems. He'll be glad to consult with you about your school's problems. There's no cost or obligation of any kind.

Write for the name of the Dudley representative in your area.



RD-2

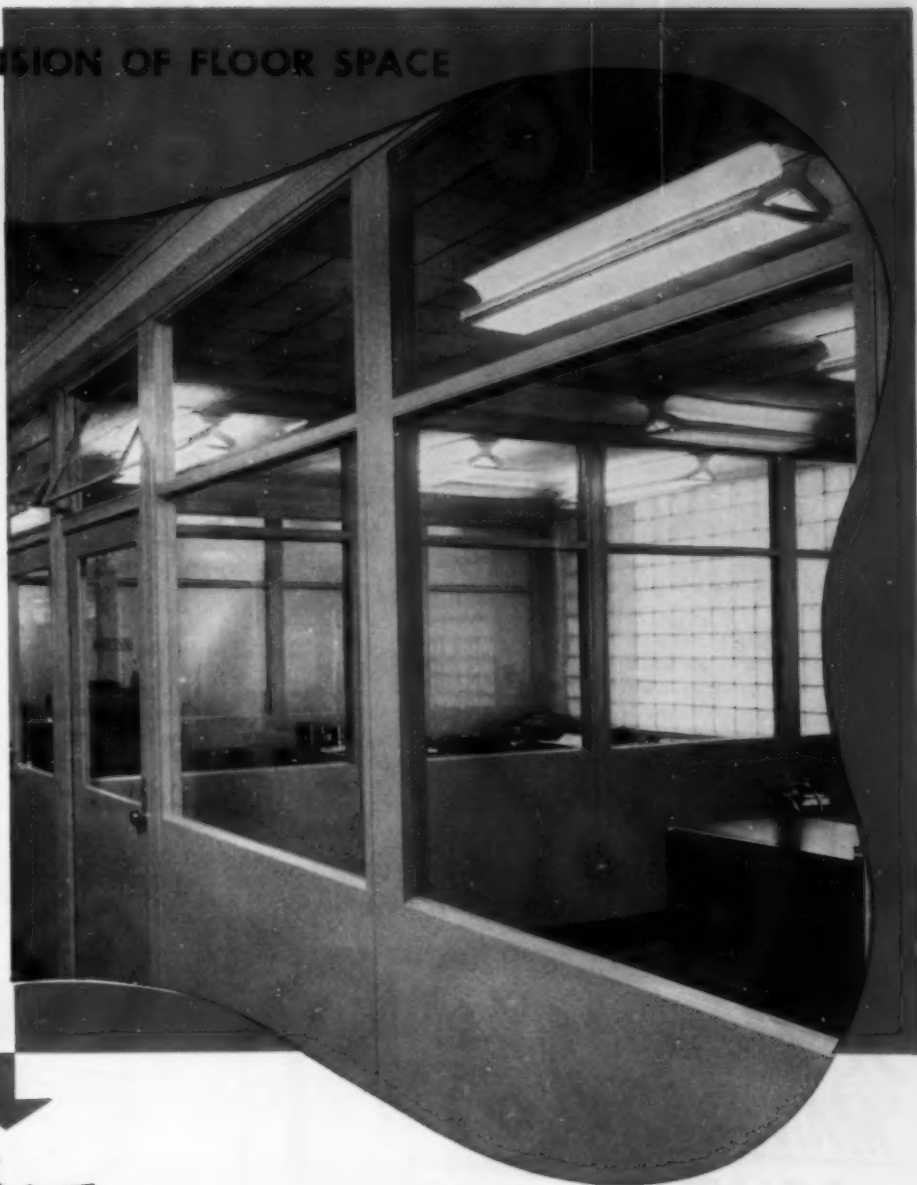
Rotating dial combination in stainless steel case. Dependable 3-tumbler mechanism. Two year guarantee.

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EVERY TYPE OF  
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BUILDING



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**THE MILLS COMPANY**

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# PEABODY TABLET- ARM CHAIRS

In the New "SUN-TAN" Color

Here's just what students want in a recitation or lecture room chair—real comfort—a rigid tablet arm—and a bright, cheery Sun-Tan color.

Behind all this are sound construction and quality materials to insure long service under most demanding conditions.

Write today for complete details on sizes—construction—prices—shipping—etc., to



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**THE PEABODY SEATING COMPANY, INC.**  
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If you are making equipment which we are not now handling; if you are developing an improvement or a new and revolutionary product, please get in touch with us immediately. We are anxious to supply your goods to our customers as you are anxious to make sales. But everything we sell is on a guarantee of complete satisfaction or money back. So if your wares are inferior, shoddy or unreliable in ANY way, we would not be even slightly interested. *They must be good in EVERY way!*

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## NEW! Dresser-Desk-Vanity All in One!



**EICHENLAUBS  
VANDRESK  
NO. 1056**

The Vandresk is completely encased—can be used in the center of the room as well as against a wall. It serves as dresser, desk, and vanity—simplifies furnishing the room—and saves  $\frac{1}{2}$  the cost!

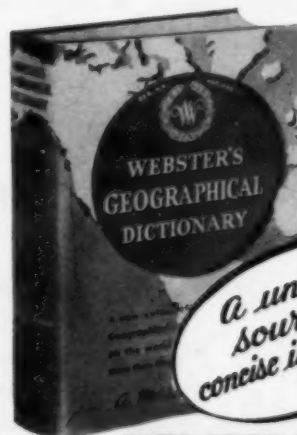
It is made of cherry—America's most beautiful native hard wood. There are three drawers in the dresser section;

one in the desk section; two book shelves; and a vanity compartment with a removable cosmetic tray. Tilting section is hinged, and has mirror. Overall dimensions—60" wide x 20" deep x 30" high.

The Vandresk is available in Maple, Walnut, or Cherry finish.

Write for Bulletin VD-503

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 Steel Grandstands and Bleachers

Through increased revenue from sports or other events, "Trouble Saver" extra seating quickly pays for itself. Every spectator can be seated in perfect safety—with excellent visibility. "Trouble Saver" Grandstands and Bleachers provide maximum capacity at minimum erection costs.

Our engineering department will gladly lay out bleachers for your requirements. **WRITE FOR BULLETIN GS-3.**

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**GREATER SAFETY**—Scientific steel construction assures greater rigidity. **QUICKLY ERECTED**—Neat, easily-handled sectional units require less time to assemble, take down and store.

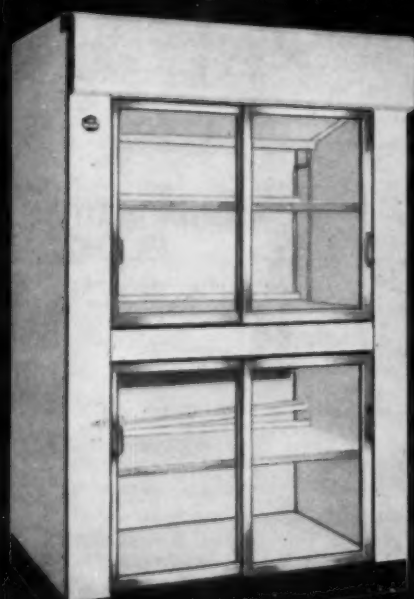


for Greater Safety . . . Efficiency . . . Economy

**THE PATENT SCAFFOLDING CO., Inc.**

38-21 12th Street, Dept. CU, Long Island City 1, New York

## NEW! SLIDE-DOOR REFRIGERATORS



Three lengths—53" (illustr.), 8', 12'.



Ideal for crowded kitchens.



Ideal for behind-counter service.

**Greater capacities!  
 Quicker, easier access!  
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You'll save time, save money with these fine new welded-steel Slide-Door Reach-Ins by Tyler! Greater capacity per square foot of floor space! Easy-slide doors for speed, convenience and space saving. Attractive, durable porcelain enamel finish—front and interior. Outstanding **VALUE!** Write for data.

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 FOR FOOD REFRIGERATION

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Precision methods insure perfect levels in screeding Laykold Surface Course.



Multiple squeegee applications of Laykold Wearcoat give perfect seal with uniform texture.

## OLD Hard Courts Made NEW

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1. Tennis Court Binder
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Laykold Binder mixed with aggregates is used to level the worn surface, removing puddles and establishing a true plane. Laykold Wearcoat then adds a uniform, resilient, all-weather seal in attractive Green, Red or Black. The final result gives the essential qualities of a full Laykold or Grastex Court—with big economy in first cost and maintenance.

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**WATER-PROOF**  
**WAX**

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- Can be wet mopped. Does not water spot.
- Tough... Elastic. Wears longer.
- Self-Polishing. Keeps floors beautiful longer.
- Re-wax without removing Water-Proof Wax—Save Time.
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A time-saving Holcomb tool. Steel wool smooths... sheep's wool applies wax... yarn head polishes and sweeps... and it's a Holcomb tool built to last.

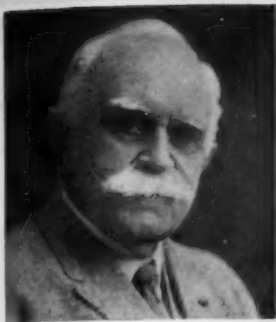
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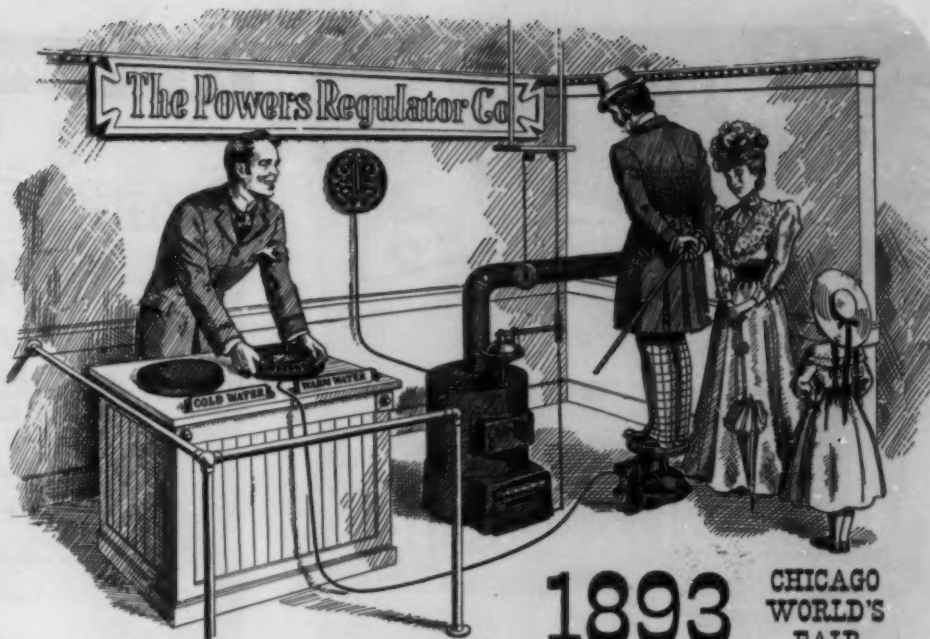
NEW YORK 18, N. Y.

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**WILLIAM PENN POWERS**

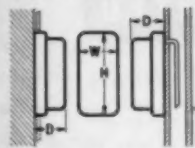
With his invention of the gradual-acting Vapor Disc Thermostat in 1889 and the First all-pneumatic system of Temperature control, WILLIAM PENN POWERS made an invaluable contribution to the science of thermostatic control for Heating, Air Conditioning and Industrial Processes.



**NOW**

**Type D  
PNEUMATIC  
THERMOSTATS**

Have durable covers with plastic insulating bases. Can be furnished with removable key, attached knob or concealed adjustment.



**SMALL SIZE**—Fits in small vertical spaces. With piping installed in minimum thickness walls or exposed on wall surface, thermostat projects only 2 1/4".

**DIMENSIONS** for standard Type D or Day and Night or Summer and Winter Thermostats:  
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**POWERS THERMOSTATS** often give 25 to 40 years of dependable service. **SIMPLE CONSTRUCTION**—Minimum of maintenance. **FEW MOTION MULTIPLYING PARTS** to get out of order and require repairs.

**GRADUAL CONTROL**—First and original gradual acting thermostats were made by POWERS—Insures more **ACCURATE** regulation.

**POWERS RADIATOR CONTROL VALVES**

Have Durable Die Cast Aluminum Top 4 1/4" dia.

- Packing can be adjusted on the job without removing top.
- Bellows can be replaced without removing valve from service.
- Closing point adjustable on the job.
- Small size, pleasing appearance.



Small convecter size has 2 3/4" dia. top.

**PACKLESS** Radiator valve also available

# POWERS

exhibit at the World's Fair in Chicago provided a

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**When You have a Problem of Temperature Control—**

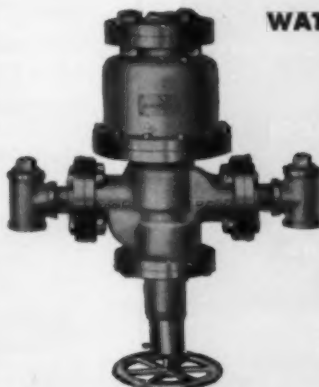
for Heating or Air Conditioning Systems or Water Temperature Control, contact your nearest **POWERS** office. There's no obligation. With a complete line of controls and almost 60 years of experience we may be able to help you select the proper type for your requirements.

**THE POWERS REGULATOR CO.**

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RC-8

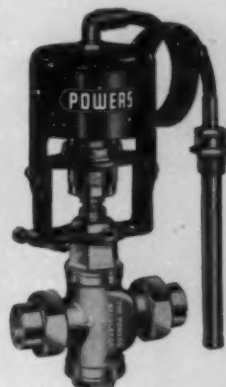
**WATER TEMPERATURE  
CONTROLS**



**THERMOSTATIC WATER CONTROLLER**  
for Gang and Zone Showers and  
Hot Water Line Control.



**TYPE H THERMOSTATIC  
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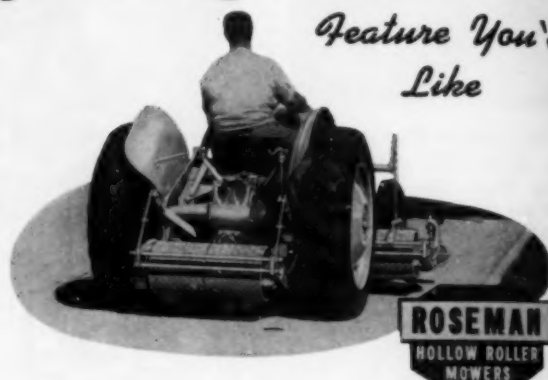
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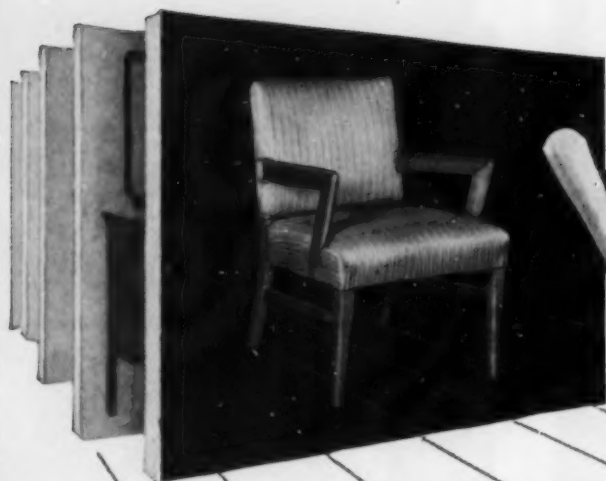
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# WHAT'S NEW

FEBRUARY 1950

Edited by Bessie Covert

TO HELP you get more information quickly on the new products described in this section, we have provided the postage paid card opposite page 84. Just circle the key numbers on the card which correspond with the numbers at the close of each descriptive item in which you are interested. COLLEGE and UNIVERSITY BUSINESS will send your requests to the manufacturers. If you wish other product information, just write us and we shall make every effort to supply it.

## Duet Student Desk



Two students can work at the same time with complete comfort at the new Duet Desk recently developed by Simmons. Especially designed for dormitory use, the Duet Desk provides staggered sitting positions, thus giving each student sufficient working area and leg room without interference in either instance with the one on the opposite side. Back of the leg space for one student is the generous, two shelf book storage space for the other. Each user has his own drawer space on his working side of the desk. The design permits the use of one lamp in the center of the desk.

The desk is compact and practical. The overall working area is 47½ by 32 inches, thus saving considerable floor space over that required for two separate desks. The desk is so designed and finished that either end may be placed against a wall or the desk can be set in the center of the room. It is built of fireproof steel, all corners curved and joints welded. Special wood drawer guides allow the drawers to open and close easily and quietly and a spring clip stop prevents drawers from falling out when pulled too far. The desk is available in 20 Simfast finishes including two-tone combinations. Simmons Company, Dept. CUB, Merchandise Mart, Chicago 54. (Key No. 803)

## Decimal Tabulator

The new Remington Electric Typewriter with Ten-Key Decimal Tabulator is designed to speed up typing of statistical, billing, accounting and other columnar material. The tabulator mechanism has been built into the Remington Electric Speed Slope keyboard for maximum convenience and accessibility. All

machines are furnished with the new Remington Rand All Nylon ribbon developed especially for electric typewriters, and the machines are available in all carriage widths up to 27 inches. Remington Rand Inc., Dept. CUB, 315 Fourth Ave., New York 10. (Key No. 804)

## Master Line of Paints

A new line of paints, known as the Master Line, has recently been announced by Devoe & Raynolds. The new line includes the following: Devoe Master Enamel, with alkyd base in 10 colors; Master Floor Enamel with alkyd base finish developed to withstand heavy traffic on cement, wood, linoleum or canvas floors, indoors or out, and Devoe Master Varnish Stain using soluble dyes that do not obscure the wood grains, thus making the product particularly useful for refinishing work. Devoe & Raynolds Co., Inc., Dept. CUB, 44th St. & First Ave., New York 17. (Key No. 805)

## Packaged Flooring

Maple and birch hardwood flooring is now available in cartons, sealed to protect the flooring from dust and moisture. Flooring sufficient to cover 10 square feet is contained in each package which is composed of assorted lengths to facilitate laying. Each carton is labeled for grade and scale and is easy to handle.

Connor "Laytite" maple and birch flooring is manufactured and graded under Maple Flooring Manufacturers Association's specifications. The flooring features eased edges, nailing groove, and grades, thickness and faces for first, second and third grades, tongued and grooved flooring. The Connor Lumber and Land Co., Dept. CUB, Marshfield, Wis. (Key No. 806)

## Heavy-Duty Sweepers

The new Series 800 is a line of all-purpose, heavy-duty sweepers, ruggedly constructed for indoor and outdoor maintenance. The new sweeper collects waste and sweeps ground or floor in one easy motion. It is adaptable to all types of sweeping jobs from heavy sweeping to picking up dirt, paper, pop bottles, leaves and other debris. A snow plow attach-

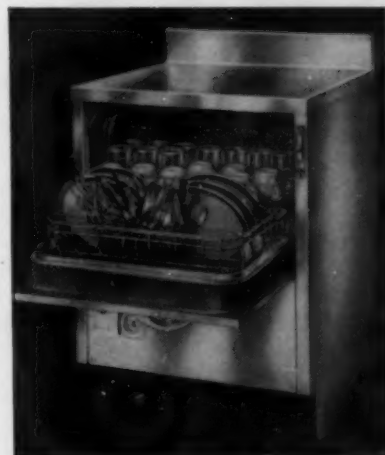
ment is available for cleaning walks, drives and parking lots of snow.

The new sweeper is powered by a 5 h.p., 4 cycle, air-cooled engine on the 36 inch size and an 8 h.p. engine on the 48 inch size. It is heavy steel plated, electrically welded for strength and durability, and equipped with finger-tip dual control. Wilshire Power Sweeper Co., Dept. CUB, 4615 Alger St., Los Angeles 26, Calif. (Key No. 807)

## Dishwasher

The new Hobart UM dishwasher and glasswasher is a small, compact, fully-automatic machine, with combination racks for general use, which can be readily converted into a specialized glasswasher through the use of quickly interchangeable racks. It is available in free-standing or built-in models and is designed for use in small colleges, in dormitory and home economics kitchens, in soda fountains, or in other places where the load is relatively light.

The machine is easy to operate. It is only necessary to load, close the door and press the switch and the full load is thoroughly washed and rinsed in approximately 3 minutes, controlled by an automatic time cycle. The unit is ruggedly constructed, the tank and inner door of stainless steel and porcelain enamel with brass fittings and fabricated steel support frame. In the free-standing



models, side, door and front panels are constructed of stainless steel. The Hobart Mfg. Co., Dept. CUB, Troy, Ohio (Key No. 808)

### Toledo Steak Machine



Flavorful but inexpensive cuts of meat can be made into tender, nutritious steaks with the new Toledo Steak Machine. The action of the cutting rolls knits odd pieces and trimmings of meat into steak portions and will blend different meats to increase menu variety. An automatic safety clutch protects motor and cutting area by stopping the machine in case bones or other hard substances are accidentally fed into it.

The machine is modern in design with white and gray baked-enamel cover which is easy to keep clean. The entire cutting assembly can be removed as a unit for cleaning and all parts contacting meat are of stainless steel. The machine is powered by a  $\frac{1}{3}$  h.p. motor and is driven by helical cut gears that are sealed in oil. **Toledo Scale Co., Dept. CUB, Toledo 12, Ohio. (Key No. 809)**

### Solid Core Flush Door

The new Solid Core Flush Door is designed to be used as an exterior or interior door. The stabilized core, with members slotted at frequent intervals in both width and length to absorb expansion and contraction, is so constructed as to withstand violent changes in temperature and humidity. The door has withstood severe tests which indicate its ability to give full door protection from the elements.

Other features of the new door include key-lock dovetails, waterproof glues in hot-plate presses for permanent bonding of core and faces, solid hardwood stiles and rails, broad selection of hardwood faces, machine planed stiles ready to finish, and engineered construction. **The Mengel Company, Dept. CUB, Louisville 1, Ky. (Key No. 810)**

### Dual Channel Console

The new RCA dual channel console for medium-sized sound systems is designed to permit dual programming of radio or recorded programs or special announcements to loudspeakers in as

many as 60 locations. The unit provides 9 input circuits and facilities for simultaneous transmission of two different programs to different areas, or transmission of a single program with the second channel reserved for intercommunication with any location.

The new equipment features centralized fingertip control, self-contained power amplifiers, complete provision for both visual and audio monitoring of the programs and provision for attaching a separate record player, transcription turntable and radio tuner. Master emergency switching is also provided. The cabinet is sturdily constructed of metal with attractive two-tone finish. **RCA Victor Div., Radio Corp. of America, Dept. CUB, Camden, N. J. (Key No. 811)**

### Novelty Awards

Novelty figures for college awards or favors are offered in the form of "Var-



sity Vic" and "Kampus Kate." Both are modernly designed figurines with fuzzy finish sweaters available with the college letter and in college colors. They are designed to be presented as awards or favors at campus functions or can be sold to campus organizations and thus serve as a source of income for various projects. **Jest-Art Originals, Dept. CUB, Culver City, Calif. (Key No. 812)**

### Ice Machine with Crusher

The York automatic ice maker has been improved by the addition of a section which produces uniformly crushed ice as needed. The compact machine makes ice cubes automatically without trays and a turn of a switch produces any needed supply of crushed ice. The cubes are made with running water and have a small hole in the center which prevents their sticking together in the storage bin at the bottom of the machine. In the new unit with the crusher, half of the bin is used for cubes and the other half for crushed ice. The machine makes ice in quantity up to 450 pounds per day of cube or crushed ice. **York Corp., Dept. CUB, York, Pa. (Key No. 813)**

### Dishwasher

A single-tank dishwasher with a power rinse is now being offered in the new Jackson Model AC-50 Dishwasher. In addition to the motor and pump for the power wash, a second motor and pump are provided for the power rinsing operation. Sprays, located both above and below the basket, revolve in opposite directions, causing an even distribution of water over all surfaces for both washing and rinsing and the power operation keeps water distribution at a uniform pressure.

An automatic timer permits operation of the complete wash and rinse cycle by pushing one switch. The machine has a rated capacity of 2000 dishes per hour. The stainless metal revolving hood permits straight through operation or installation in corner locations. The combination overflow-strainer-drain plug eliminates the possibility of clogging sprays with food particles and causes automatic overflow of greasy water during each rinse cycle. **Jackson Dishwasher Co., Dept. CUB, 3703 E. 93rd St., Cleveland 5, Ohio. (Key No. 814)**

### Orange Juicer

The Automatic Orange Juicer is, as its name implies, a simple, automatic device for quickly juicing fresh oranges. Fresh oranges are loaded into the storage bin at the top of the machine, then, at a touch of a button, the oranges roll down the runway and are cut and squeezed in a quick, simple operation, the fresh juice flowing into the container beneath.

The juicer is fully automatic in operation, is quiet and sanitary and can be quickly and easily dismantled at the end of the day, without tools, for thorough cleaning. Of stainless steel construction, the unit requires a minimum of maintenance and operates on any standard



electric outlet. **Automatic Orange Juicer Corp., Dept. CUB, 22 Park Place, New York 7. (Key No. 815)**

## Sports Timer Movements

A new line of sports timer movements for football and basketball scoreboards has recently been announced by Montgomery. The movements, shipped complete with instructions and wiring diagrams, can be easily installed in scoreboards built with local material and student help. Standard parts provide remote control for the timer from the sidelines. The timer movements can be detached for off season storage and need no special lubrication or other care.

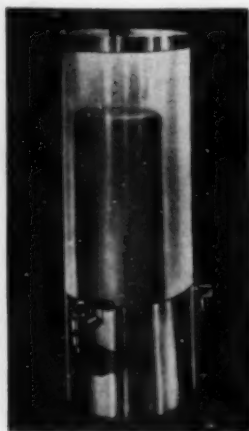
The basketball timers are available in 6 different models for 8, 10 or 20 minute playing periods for operation on 115 volts, 60 cycle AC. The football timers are available in 8 different models for 12 or 15 minute periods for operation on the same type circuits. **Montgomery Mfg. Co., Dept. CUB, 549 W. Washington Blvd., Chicago 6. (Key No. 816)**

## Potato Cutter

The Crispy Q Stringmaster Potato Cutter, in a new improved streamlined model, is a machine which turns out long, continuous swirls of uniformly cut potato ringlets for deep frying. They are tasty and attractive and provide a means of dressing up meals. The whole potato, skin included, is used in this process, thus eliminating waste. The machine is of sturdy construction, with stainless steel operating parts, and is easy to operate. **California Engineering Co., Dept. CUB, 656 N. Cahuenga Blvd., Los Angeles 4, Calif. (Key No. 817)**

## Juice Dispenser

The new Ihle Juice Dispenser is designed to keep juice cold without mechanical refrigeration. It requires only 9 inches of counter space and holds nearly 2 gallons of juice. It is easy to clean, to refill and to move as needed.

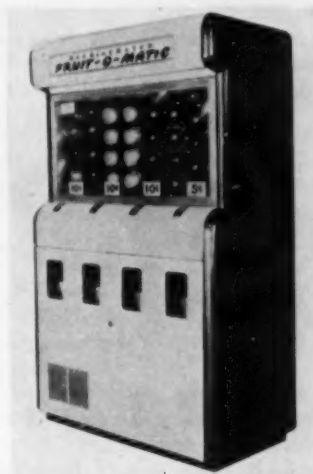


The base of the dispenser is of stainless steel and the "frosted plastic" container makes juice visible without opening. The

vacuum outer wall maintains low temperature of juice and increases length of life of ice. Magnetic whirlpool agitation is obtainable by power supplied by a General Electric motor that requires no oiling, or by manual agitation if preferred. **Ihle Manufacturing Co., Dept. CUB, 1414 S. Central Ave., Glendale 4, Calif. (Key No. 818)**

## Fruit-O-Matic

Merchandising of fruit to students and personnel is now simplified with the Fruit-O-Matic, a fully automatic refrigerated fruit vending machine. This sanitary food dispenser holds 208 pieces of fruit and will handle apples, oranges, peaches, pears and even grapes and cherries when sealed in air tight containers. Other types of merchandise may also be dispensed in this machine which vends fruit at controlled temperatures. The cooling unit can be easily adjusted for other products. The vending system



permits selectivity of commodity and of price and enables 4 people to choose merchandise at the same time. **Fruit-O-matic Mfg. Co., Dept. CUB, 5225 Wilshire Blvd., Los Angeles 36, Calif. (Key No. 819)**

## Simplified Multiplier

What is said to be the first simplified method of multiplying was developed by John L. Garwood, former federal disbursement officer, for his own use and has recently been put on the market. It is a chart which represents an improvement in elementary mathematics, has life-long use and application for everyone in accounting and allied subjects. The chart sells for a small sum and should also be of interest to students in studying the recurrence of figures and the juxtaposition of digits. It is being distributed by **William A. Battista, Inc., Dept. CUB, 15 W. 47th St., New York 19. (Key-No. 820)**

## Ice Maker



The Rapid Freeze Ice Cube Maker is a low cost unit capable of producing 2300 cubes or 250 pounds of ice per day. It features simple, plug-in operation with no plumbing installations necessary. The large, easy-opening storage bin holds the continuous supply of ice cubes. Each freezing makes 384 cubes or 40 pounds of ice at a minimum of cost.

The unit is compact and easily moved if desired. It is 24 inches deep, 40 1/4 inches high and 38 inches wide and is constructed of all-welded steel with silver hammertone finish. It is available with or without a condensing unit and is designed to accommodate any standard 1/3 h.p. hermetic or open type unit. It operates on alternating current and is equipped with expansion valve, temperature control, heat exchanger and drier. The Rapid Freeze is manufactured by the **Brewer-Tichener Corporation, Binghamton, N.Y., and is being distributed by Refrigerated Sales Corp., Dept. CUB, 19 W. 44th, New York 18. (Key No. 821)**

## Dispensers

A new line of dispensers for paper towels and toilet paper has recently been announced. The single-fold junior paper towel dispensers are available in both chrome and baked white enamel finishes and are built for long use. The curved doors are equipped with full-length hinges for long wear and lock and key eliminate tampering. The paper is automatically fed by gravity through the bottom slot. The double-fold general purpose towel dispensers dispense double-fold paper towels of most makes and have flat front doors with rounded corners to eliminate the possibility of catching and tearing clothes.

The new line of toilet paper dispensers is designed to dispense either single or double-fold toilet paper. They have stainless steel tops with white enamel bodies and the full sized front door is held in place by a lock. A slot in the lower front indicates when refilling is required. **The Bennett Mfg. Co., Dept. CUB, Alden, N. Y. (Key No. 822)**

## Ice Cube Maker



A new, completely automatic ice cube maker in a low cost field has been announced by Carrier Corporation. Employing a new principle by which cubes are individually frozen, the machine is capable of delivering 410 pounds of ice, or 8500 cubes, every 24 hours. The machine is available for either 115 or 230 volt current and is easily connected with water supply and drain.

Compact in design and finished in neutral gun metal gray, the automatic ice cube maker occupies a floor area of only 24 by 25 inches with a bin which stores 8 hours production or 160 pounds of cubes. An alternate bin of 240 pounds storage capacity is also available. The freezing cycle operates automatically as the ice is removed from the bin, thus keeping a full supply always available. Carrier Corporation, Dept. CUB, Syracuse 1, N. Y. (Key No. 823)

## Beverage Dispenser

An automatic beverage dispenser is now available which provides a choice of three flavors. Known as the Cole-Spa 3-Flavor Hermetic Cup Dispenser, the machine requires 5 seconds to mix, pre-cool and serve the selected, uniform drink in a sanitary paper cup. A hermetically sealed vending chamber ensures sanitation of the drink itself and an automatic coin changer supplies nickels as needed. The unit is finished in 2 tone maroon and gray and may be purchased direct or installed and serviced, with a percentage of the profits shared with the college, cafeteria, fraternity house or other organization. Cole Products Corp., Dept. CUB, 5000 S. Halsted St., Chicago 9. (Key No. 824)

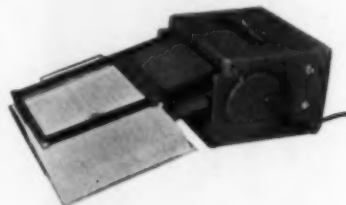
## Louvered Lighting Fixtures

New, all-steel louvered fluorescent lighting fixtures are now available for two 40 watt T12 lamps. Light distribu-

tion of 40 per cent upward and 60 per cent downward gives balanced illumination in critical working zones. The louvers are held on both sides by sturdy loop clips which act as hinges and catches so that the louvers may be quickly and easily opened from either side. A special tension arrangement holds the cross louvers in position. The wiring trough cover is hinged for easy accessibility to ballasts, wiring and sockets. Known as Linolite Series 27, the new fixtures can be installed singly or in continuous rows. The Frink Corp., Dept. CUB, 27-01 Bridge Plaza No., Long Island City 1, N. Y. (Key No. 825)

## Reading Accelerator

Many years of research and experiment by reading instructors and educational psychologists have resulted in the Reading Accelerator developed by Elizabeth A. Simpson, director of the Adult Reading Service at Illinois Institute of Technology, Chicago. A mechanical shutter that descends over reading material at a controllable word-per-minute rate is the basis of the new device which is so designed that it can be used with



any type of reading matter without pulling pages from their bindings or otherwise mutilating materials.

Case-study material and file data on the Accelerator are available and a comprehensive reading-training program accompanies the device. The machine is said to increase reading speed, improve comprehension and perceptual span and help problem readers. Science Research Associates, Dept. CUB, 228 S. Wabash Ave., Chicago 4. (Key No. 826)

## Direct-Reading Balance

The new "Gram-atic Balance" is a direct-reading instrument for weighing drugs and chemicals with analytical balance accuracy and in a minimum of time. The new balance has only one pan and the weight reads directly on a scale at eye level. All required weights are built in and are manipulated by 4 external knobs. Inexperienced operators can learn to operate the balance quickly and accurately. It is sturdily constructed and is indicated for use in pharmacies and laboratories. Fisher Scientific Co., Dept. CUB, 717 Forbes St., Pittsburgh 19, Pa. (Key No. 827)

## Fabric Designs

New designs, colors and textures in modern, traditional, conventional and documentary patterns are being offered in the extensive new line of Goodall fabrics. Included in the line are 24 new patterns in 225 colors. The materials are easily laundered and color-fast. They resist wrinkles and soil and are designed for long wear. The bright, cheerful patterns and colors are designed for bedspreads, draperies, upholstery and other uses. "Blended" of selected, non-fuzzy, lint-free fibers, the fabrics wash easily with soap and water, resist perspiration, alcohol and most acids, and are available in a wide variety of textures. Goodall Fabrics, Inc., Dept. CUB, 525 Madison Ave., New York 22. (Key No. 828)

## Ice Cube Machine

Automatic operation of the new Ajax Electric Iceman provides 156 cubes of clear ice in approximately 30 minutes. The newly frozen cubes drop into an insulated storage compartment which holds up to 1400 cubes or 60 pounds of cube ice. The machine stops automatically when the storage space is filled and starts again automatically when sufficient ice has been removed.

The machine operates without recirculating water. Five quarts of fresh water are delivered to the machine at the start of the freezing cycle. When the four quarts are frozen, a defrosting action takes place and approximately one quart of water is siphoned off, after which the cubes drop into the storage compartment. The machine will provide up to 7500 cubes in a 24 hour period if needed. It is finished in white enamel with chrome trim and a clear plastic hopper lid. The machine is manufactured by Servel, Inc. of Evansville, Ind., and will be distributed exclusively



by The Ajax Corporation of America, Dept. CUB, 176 W. Adams St., Chicago 3. (Key No. 829)

## Product Literature

- The well-known **Vul-Cot Waste Baskets** are again available for college use. These strong, attractive baskets have new bonded seam construction and are available in round taper, square taper and round straight models. Full information on these sturdy Vul-Cot Waste Baskets is available in the new catalog sheet recently issued by National Vulcanized Fibre Co., Wilmington, Del. (Key No. 830)
- The story of "**Blue Ridge Aklo Glass**," a glass which filters daylight by barring rays that tire the eyes and carry heat, is told in a booklet issued by Libby-Owens-Ford Glass Co., Nicholas Bldg., Toledo 3, Ohio. The glass is described as being a soft, eye-rest blue-green in color and its use is said to lower costs of air-conditioning, reduce glare and increase efficiency. (Key No. 831)
- "**The Proper Care of Floors**" is the title of a brochure recently released by West Disinfecting Co., 42-16 West St., Long Island City 1, N. Y. The 32 page brochure discusses care of every type of floor and floor surface. It is divided into two parts: floor preservation—cleaning, sealing and maintaining—and the proper methods of maintenance for all types of floor surfaces. (Key No. 832)
- The type of resilient flooring best suited to college needs as well as the needs of business, with data on the various types available, is discussed in a booklet recently issued by Armstrong Cork Co., Lancaster, Pa., and entitled "**Which Floor for Your Business?**" (Key No. 833)
- The advantages of light directional glass block and the conventional double-hung window in a single unit are described in a 4 page pamphlet, "**New Idea in Fenestration**," issued by American Structural Products Co., Toledo 1, Ohio. The pamphlet illustrates the new fenestration combination in single and multiple units and shows how Insulux Prismatic Glass Block bends the rays of light toward the ceiling to be redirected deep into the room. The outside surface of both glass block and sash can be cleaned as easily as any double-hung window, according to the information in the pamphlet, which also gives information on construction details. (Key No. 834)
- **Technical Bulletin No. 2** on centralized panel program control systems for hot water and radiant heating has recently been issued by Sarcotherm Controls, Inc., Empire State Bldg., New York 1. Schematic diagrams of boiler hookups and wiring diagrams are included with complete specification for these systems. (Key No. 835)
- "**Grading Rules for Northern Hard Maple, Beech and Birch Flooring**" is the title of a new booklet recently issued by Maple Flooring Manufacturers Assn., 46 Washington Blvd., Oshkosh, Wis. The standard grades of northern hardwood floorings are described in detail and information on standard lengths is given. (Key No. 836)
- "**Sports and Recreational Lighting**" is the title of a 37 page bulletin prepared by G-E illuminating engineers which is said to be the most complete treatment of the subject now available. A guide to current recommended practices in the illumination of sports and recreational areas, the bulletin is concerned with lighting requirements of both player and spectator. It is divided into 3 parts, the first having to do with outdoor applications, the second with indoor lighting and the third with operation and care of lighting equipment. Each type of sporting event is covered on a separate page and the data is illustrated with tables, sketches and photographs. The bulletin sells at 45 cents per copy and is available from General Electric Co., Nela Pk., Cleveland 12, Ohio. (Key No. 837)
- The new line of "**Velva-Glo**" all-nylon uniforms offered by Angelica Jacket Co., 1419 Olive St., St. Louis 3, Mo., is described and illustrated in color in a brochure recently released. "Velva-Glo" is described as a light weight fabric with a high sheen that requires no ironing and is resistant to wrinkles, abrasion, mildew, flame and moths. A swatch is included in the brochure together with order blank. (Key No. 838)
- Corrosion-resisting **Duriron** and **Durichlor** are described in **Bulletin 113** recently issued by The Duriron Company, Inc., 17 E. 42nd St., New York 17. Data collected on these products during the past several years are given in the bulletin which lists alphabetically various corrosive materials and the reaction of these products to them. (Key No. 839)
- Two new catalogs, **No. 557** and **559**, have recently been issued by the National Radiator Co., Johnstown, Pa. No. 557 illustrates and describes the new "55" series National Gas Boiler which is designed for steam vapor or hot water heating in institutions and other major space heating installations. Catalog No. 559 gives constructional details, ratings and the conventional applications of National Art Baseboard to secure a combination of radiant and convected heat at floor level and along outside walls. The catalog illustrates and describes the installation of this component of a forced hot water heating system, showing both the semi-recessed Type BR and Type BF which is installed against the plaster in place of conventional baseboard. (Key No. 840)
- "**Nutritional Data**" is the title of a 114 page book, compiled by Harold A. Wooster, Jr., and Fred C. Blanck of the Heinz Nutritional Research Div., Mellon Institute, Pittsburgh, and distributed without charge by H. J. Heinz Company, P.O. Box 57, Pittsburgh 30, Pa. A successor to "Nutritional Charts," the present edition is completely rewritten, brought up to date and offered in a plastic bound book which opens flat. The book carries a wealth of nutritional material, chapter headings including vitamins, the essential elements, proteins and amino acids, signs and symptoms of malnutrition, the metabolism and action of foods, human nutritive requirements, planning diets for good nutrition and other helpful subjects. (Key No. 841)
- "**Clarke Floor Finishes, Maintenance Materials and Equipment**" are discussed in a folder recently issued by Clarke Sanding Machine Co., Muskegon, Mich. Data on the full line of cleaners, waxes, sealers, finishes and floor machines carried by the company to take care of every institutional need in floor maintenance are included. (Key No. 842)
- "**Maintenance Checking Chart**" is the title of a publication recently released by United Laboratories, Inc., 16801 Euclid Ave., Cleveland 12, Ohio. The chart is designed to assist those responsible for plant and building maintenance in securing needed products and services. (Key No. 843)
- The effective use of Kodachrome 2 by 2 inch slides for teaching, demonstration and lectures is discussed in a booklet, "**Notes on Kodachrome Slide Sequences as Aids in Business and Education**," published by Eastman Kodak Co., Rochester 4, N. Y. The booklet discusses the applications of slide sequences, considerations in planning the sequence, steps in planning, preparation of the slide sequence, preparation of commentary and presenting the slide sequence before small groups or larger audiences. (Key No. 844)
- **Johnson's Wax Super 16 Heavy Duty Floor Maintenance Machine** is the subject of a brochure recently released by S. C. Johnson & Son, Inc., Racine, Wis. Detailed information on the new heavy duty, all-purpose floor maintenance machine which can be used for polishing, scrubbing, sanding, grinding, steel-wooling and shampooing is given in the brochure. (Key No. 845)

## Suppliers' News

**North Star Woolen Mill Co.**, Minneapolis, Minn., manufacturer of North Star woolen blankets for the past 85 years, has moved its corporate and manufacturing headquarters to Lima, Ohio.

Ready ...

Set ...

GO!

95 out of 100  
slips and falls  
are **WORKED**  
into your floors

Slip and fall accidents don't come with your floors.

95% of them stem from still-common floor cleaning, polishing and maintenance methods that were developed long ago when nobody cared about safety.

Use these "horsebuggy" measures to protect your floors and you make them as slick as a sliding pond. Or, stop the accidents by stopping the program, and you let your floors go to pot.

The modern solution used by safety-conscious buildings and plants is the



Legge System of Safety Floor Maintenance. This 2-point floor safety program provides Legge Safety floor polishes and cleaners designed to give your floors a clean, slip-resistant shine . . . and free instruction and supervision by Legge Safety Engineers to make sure your crews use those materials intelligently and efficiently.

Wherever this modern, scientific plan is used, it proves that up to 95% of slips and falls are unnecessary — by reducing slippery floor accidents by that much. In fact, the Legge System is widely recommended by most casualty insurance companies.

Don't let old-fashioned maintenance methods create an unnecessary hazard on your floors. Get the facts about the scientific Legge System by clipping the coupon to your letterhead and mailing it today. Walter G. Legge Company, Inc., New York 17, N. Y. Branch offices in principal cities.

Walter G. Legge Co. Inc.  
101 Park Ave., New York 17, N.Y.

Please send me a free, no-obligation copy of your Mr. Higby book.

Signed \_\_\_\_\_

Title \_\_\_\_\_

Types of flooring \_\_\_\_\_

Area \_\_\_\_\_ sq. ft.

CB-R

**LEGGE SYSTEM**  
of Safety Floor  
Maintenance

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Walter G. Legge Co., Inc.

(ADVERTISEMENT)

## School Halts Climbing Accident Rate With New Floor Program

The D..... School's floors aren't slippery any more—although they had been for years. And students are no longer slipping on those floors—although this school once had an accident rate that kept climbing year after year.

Caring for seven floors of linoleum had become increasingly troublesome. During each summer recess, these floors would get a complete waxing. And within a few days of the opening of the new school season, the floors would be so slippery that the custodian was compelled to remove all wax for the balance of the year—even though this left the floors unprotected.

Over a period of years, the number of slipping accidents increased steadily until even the insurance company was alarmed. It was at their suggestion that a Legge Safety Engineer was finally consulted.

A program of safety maintenance for the school's floors was worked out with the custodian—and Leco, a Legge floor safety polish, was substituted for the wax. Since the day the new program was put into effect, not a single slip has been reported.

The custodian reports finding another advantage in the new floor safety program. He is able to cover twice as much with Leco as with the waxes he formerly used, and gets safer, polished floors with less material.

Legge Safety Engineers are available to study the floor maintenance problems of any school and give recommendations. For a free consultation, fill in the coupon to the left, clip to your letterhead and mail to Walter G. Legge Co., Inc., 101 Park Ave., New York 17, N.Y.

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Packaged Flooring
- 807 Wilshire Power Sweeper Co.  
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- 808 The Hobart Mfg. Co.  
UM Dishwasher
- 809 Toledo Scale Co.  
Toledo Steak Machine
- 810 The Mengel Company  
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"Johnson's Wax Super 16"

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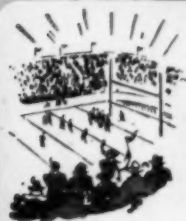
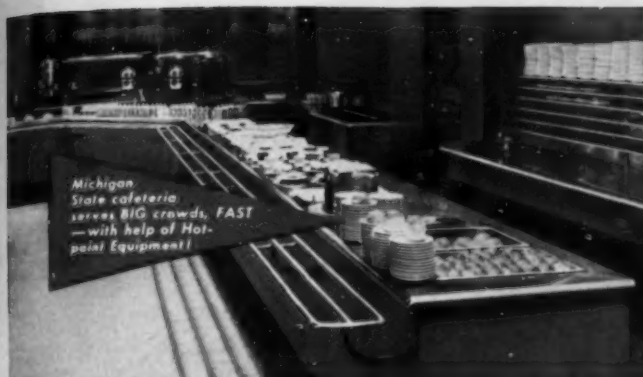
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NAME

TITLE

INSTITUTION



## *"Big Appetites vs. Slim Pocketbooks"* **ALL-ELECTRIC COOKING WINS!**

"Huge healthy college appetites (and always in a hurry) but thin collegiate pocketbooks"... that's the *problem* at Michigan State. A Hotpoint All-Electric Kitchen is an *important* part of the answer.

AND it's so *good* an answer, the Kitchen also is one of the four Hotpoint-equipped Grand Award Winners in Institutions Magazine's 3rd Annual Food Service Competition.

At Michigan State many young people are eating their first away-from-home meals and comparing them with Mother's cooking. Here again All-Electric Equipment takes highest honors. The food is *good*, the service is *fast*, the cafeteria is clean and pleasant. The prices are very reasonable—and All-Electric Cooking is a big factor in keeping those prices *down* within reach of the students' slender budgets.

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Remember—in your operation, LOWER COSTS mean INCREASED PROFITS. Your nearest Hotpoint Representative will be glad to talk it over with you whether you have immediate plans for building or remodeling or are looking to the future—see your Hotpoint man soon!

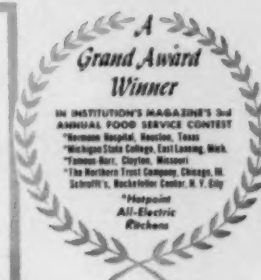
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and discerning col-  
lege appetites.*

**... AT MICHIGAN STATE**  
East Lansing, Michigan

**4 OUT OF 5**  
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**WINNERS IN**  
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**ALL-ELECTRIC**  
**COOKING EQUIPMENT**



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"Cuts our cleaning costs more than \$1200 annually"

"Cleans floor area size of city block in 6½ hours"

"Does 4-hour cleaning job in 30 minutes"

"Cleans 55,000 sq. ft. of floor in single day"



A Finnell SCRUBBER-VAC

## OTHERS SAVE ON LARGE-AREA SCRUBBING ... Why Not You?

With a *Finnell Scrubber-Vac*, all four of the floor-cleaning operations can be done mechanically! This combination machine applies the cleanser, scrubs, rinses if required, and picks up. With one or two operators, a *Finnell Scrubber-Vac* can do a cleaning job better in half the time it takes a crew of six to eight using separate equipment for the several operations.

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